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Curriculum Vitae of George A. Pecoraro, Ph.D.

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George A. Pecoraro, Ph. D.

Dr. George A. Pecoraro has a Ph.D. in Material Science from Rensselaer Polytechnic Institute in Troy N.Y.(1969). His Bachelor of Science and Masters of Science Degrees were in Ceramic Engineering from the University of Illinois in Champaign-Urbana, IL (1962 and 63).

He has been serving as an expert witness since 2003 in more than 30 cases involving:

- glass product liability cases such as spontaneous breakage of tempered plate glass and tempered glass shower doors, bare edge shower and bath room doors, architectural laminated glass, balcony enclosures; also beer bottles breaking during the filling and capping processes.
- personal injury cases involving glass from spontaneous breakage of a cold milk jug, beer bottles, flower and candle vases, beverage and food sauce bottles, glass table tops, a red wine vessel and commercial plate glass and,
- injuries from exterior and storm door glass panels and fire door wire glass breakage from human impact
- commercial, industrial and residential building glass damage issues such as scratched and gouged windows resulting from improper cleaning or mishandling and from hurricanes.

He was recently involved with two cases of plate glass damaged by hurricanes, one involving severe injury, and another case involving severe injury from conventional plate glass and a table top glass. He has been involved with cases involving numerous fractured beverage bottles (iced tea, lemonade, beer, etc.), a wide-mouth salsa bottle and pickle jar as well as a beer mug injury, an injury involving fire-rated wire glass, and a fatality from an exploding fire place glass.

Pecoraro is well versed in all aspects of flat glass manufacture from glass composition to the melting and refining to the fabrication of automobile glass and both residential and commercial glazing. He has been involved with problems involving the strength of automotive glass having various degrees of temper as well as laminated glass for automotive windshields.

He has been deposed twelve times as follows:

1. issues involving spontaneous breakage of tempered glass from NiS stones while employed by PPG Industries, Inc., and in
2. 2006 for a personal injury case involving a damaged patio door glass panel,
3. 2008 regarding an injury case involving a glass hurricane vase sold by Pier One
4. 2008 for a personal injury case involving a glass vase that resulted in a severe hand injury
5. 2009 for another hand injury involving a wide mouth Vlasac pickle jar,
6. 2009 for a personal injury case involving a fractured beer mug during an altercation at a bar.
7. 2010 for an injury from a beer bottle that broke spontaneously
8. 2010 for and injury from an alcoholic lemonade bottle that broke while the cap was being twisted off.
9. 2011 for a law suit of a glass tempering company vs. an insurance company who refuses to pay for all of the claimed equipment and replacement glass losses during an electrical fire in a control panel that shut down the line.
10. 2011 for a personal injury case involving a wide mouth salsa jar that fractured during opening and resulted in a severe hand injury.
11. 2011 for a fatality involving a fractured annealed glass display case in a bar restaurant during an altercation.
12. 2011 for the swallowing of a piece of glass resulting in injury and surgery from a beer bottle lip that fell into the beer.

Pecoraro Consulting, LLC in conjunction with Edward Kruppa of FAST Consulting LLC also conducts glass fracture analysis and forensics, and simulated fracture testing. They have measured the fracture strength of various glasses using several methods – and have conducted ANSI Z-97.1 testing of float glass to qualify or disqualify it as pass or fail.

A more detailed sampling of specific litigations for which Pecoraro has served as an expert is reviewed below.

Dr. Pecoraro was designated as a voting member of the International Code Counsel, an association dedicated to protecting the health, safety and welfare of the public by making buildings safer. He is well versed in commercial and residential building codes for the period 1967 to date - a period during which the codes for the use of fully tempered glass (safety) glass changed dramatically
Prior to retirement in 2003, Dr. Pecoraro was employed for almost 40 years by PPG Industries, Inc. at its Glass Research Laboratory near Pittsburgh, PA. It is a manufacture of commodity float glass, laminated and tempered automotive and coated architectural glass, and also continuous strand fiberglass. He has developed specialty glass compositions and fuel-saving glass formulations, but yet did not sacrifice end use performance in commercial buildings and residential houses and automobiles.

Curriculum Vitae
DR. GEORGE A. PECORARO

PROFESSIONAL EXPERIENCE:

2007 to 2009 Appointed as a voting member of the International Building Code Structural Committee (IBC-S) by the Board of Directors of the ICC. (International Code Council.). Participated in the 2008 meeting.

2003 to 2009 Glass industry consultant for glass related injuries and product liability, glass technology and the glass founding process.

1963 to 2003 PPG INDUSTRIES, GLASS TECHNOLOGY CENTER
Senior Research Engineer

Conducted R&D and process optimization in most aspects of glass manufacture, glass chemistry and glass properties.

Identified additives to the glass batch that virtually eliminated spontaneous glass breakage of fully tempered (safety) glass caused by nickel sulfide stones.

Served as PPG's representative to the NSF-University-Industry Center for Glass Research since 1996 and as its president for the 1997-1998 calendar year. This organization conducted research in virtually every aspect of glass science and technology by the top scientists and engineers in the specialty glass, fiber glass, flat glass, bottle and TV tube industry.

Appointed as the industrial leader by PPG, Industries, Inc. of a 5 year DOE-funded project the developed the kinetics of silica and alumina soda vapor concentration
Optimized glass composition to obtain the minimum log 2 and log 4 melting and forming viscosities without altering bending and tempering properties.

PUBLICATIONS:

Co-edited a book on the corrosion of materials by molten glass, and authored many articles in various technical publications. A sampling of articles is as follows:

- Fusion-Cast Refractories Serve at Reduced Pressure*, The GlassResearcher*, Vol. 6, No. 1 (1996).
- How the Properties of Glass Melts Influence the Dissolution of Refractory Materials, *Advances in Fusion and Processing of Glass* III, Ceramic Transactions, Vol. 141.
    - Corrosion of Refractory Metals by Molten Oxides*, The Glass Industry*, Oct, 1970.
        - Analytical Models for High-Temperature Corrosion of Silica Refractories in Glass Melting Furnaces, *J. Electrochem. Soc.*,148, B59-67 (2001).
        - Co-Editor – *Corrosion of Materials by Molten Glass,* American Ceramic Society, Westerville, OH (1996).
    - Development in Glass Furnace Refractories*, TheGlassResearcher*, Vol. 7, No. 2 (1998)

U.S. PATENTS:

A sampling of the over 20 U.S. Patents and 40 foreign patents he authored or co-authored are as follows:

U.S. 20040110625A1, Method for making float glass having reduced defect density
U.S. 20040107732A1, Apparatus and method for producing float glass having reduced defect density
U.S. 20030054938AI, Methods of adjusting temperatures of glass characteristics, etc.
U.S. 20020169062A1, Methods of adjusting glass melting and forming temperatures, etc.
U.S. 5,401,287, Reduction of nickel sulfide stones in a glass melting operation (spontaneous glass fracture)
U.S. 4,792,536, Transparent infrared absorbing glass and method of making the same
U.S. 4,744,809, Method and apparatus for homogenizing glass

PARTIAL HISTORY OF LITIGATIONS SERVING AS AN EXPERT WITNESS:

1. Testified before a judge and six person jury for a personal injury case as an expert witness for the plaintiff in Alexander v. Smith in Broward County, FL in April, 2007. The attorney was Joseph Boatwright, a personal injury lawyer of Billings, Morgan, Boatwright and Hernandez of Winter Park, FL. The issue was a BB or bullet hole in the plate glass sliding door that was installed in 1968 during initial construction. The defense claimed that the hole did not significantly weaken the glass and that the 11 year old girl would have been injured had the hole not been in the glass. I simulated the impact in my lab, and showed that it weakened the glass by over 75% using a standard strength testing procedure (ANSI Z97.1). The defendant covered the hole with a sun catcher in an attempt to hide the hole. Furthermore, since there was a major addition to the house after 1976, the glass should have been replaced with fully tempered safety glass according to Federal codes. Result was favorable to the plaintiff. I was also deposed by the defense attorneys several months prior to the jury proceedings.

2. Testified before a judge and six-person jury in a personal injury case as an expert witness for the defense in Boston Mass. The attorney was Paul Kober. The case was Vermont Mutual v. Maquire. I simulated the impact and measured the amount of force it took to fracture a thick-walled glass beer mug versus normal every day forces to open and close doors, etc. The simulation was recorded on a DVD disc. This was done to challenge the plaintiff's claim that he was only trying to break up a fight by using the mug to separate two people involved in the altercation.

3. Testified before an arbitrator for the plaintiff in a case where polished bare-edged tempered glass hotel bathroom doors were spontaneously exploding. The plaintiff was the Diplomat L.P. (Westin Diplomat in Hollywood FL). I was hired by the Chief facilities Engineer of the hotel, David Martinez. Mr. Kruppa of F.A.S.T. Consulting LLC found the NiS stones of ~ 85 to 120 microns in dimension in the 200 lbs of rubble of each of two doors that caused the breakage. The attorney that I worked with was Ann DePriester of DLA Piper US LLP in Atlanta, Georgia. Results were favorable to the plaintiff.

4. Expert witness for a very high profile hit and run case in Los Angeles involving a fatality. The defendants were Cabrerra and Luna. The Case No. is BA354927. The Assistant District Attorney was Janis Johnson. I and a colleague simulated the impact of a man into an automobile windshield. We showed that the injuries to the abdomen area occurred when he was pulled out of the windshield, not when he went into it. Partly because of our work, the defendants pleaded guilty.

5. Glass expert for Charrie Yvonne Jones vs. J & J Foods, Inc. (State Court of Hall County, State of Georgia, Case 2008SV1000N). The plaintiff fell against a glass display case which fractured and severely injured her. The glass was not tempered. The attorney was Christina Wagner.

6. Glass expert for Snyder v. John Deere. A soda pop delivery man tripped and fell through a large plate glass window. The glass was not tempered, The question to be answered is was the use annealed glass (not tempered) installed in the building before the code requiring the use of safety (tempered) glass became law.

7. Expert witness for the New Central Library, City of Des Moines Central Library for product liability law suit involving a spontaneous breakage issue with the very expensive tempered glass panels in its new library. The Law Firm is Duncan, Green, Brown and Langeness. The attorney was Martin Kenworthy.

8. Expert witness for a current case Thomas Venti v. Carousel Flowers and Delaware Valley Floral Group – Case 001841 for the plaintiff. Mr. Venti seriously cut his hand while washing a vase. The cross section shape was square, and one section was very thin - as thin as a light bulb.

9. Expert witness for Forray v. Stoelze-Oberglas File 7261.56520 for the defense. Miss Forray allegedly cut her hand while "detailing" a red wine glass. I made the case for the defense that the red wine glasses were mishandled in the restaurant by the dishwashers and the wait staff. I purchased red wine glasses or different brands and also used actual Stoelze-Oberglas red wine glasses for testing. Mr. Kruppa and I abraded the stems of some of the glasses and protected the others from damage. We measures the fracture strength of all the glasses and showed that the abraded glasses broke at low force, while the abraded glass stems broke at high force, perhaps higher than a small woman could exert. The case was settled out of court.

10. Glass expert for Heller and Heller, P.A of Coral Springs, FL for their client Danny Moreno to conduct extensive forensic examination and testing of a vase that broke in his hand while he was filling it with water. I was asked to determine if there was a defect in the design or in the manufacture of the vase. I found that the fracture of the vase originated at a scratch in the inner surface of the vase near the intersection of its conical-shaped side wall and the base. I do not know if the case is proceeding to litigation.

11. Expert glass fracture witness for Beckman, Kelly & Smith of Hammond, IN for the plaintiff, Shellie Catherman v. Pier I Imports (U.S.), Inc. File No. 0857-1. I was deposed in the case. Ms. Catherman's lower arm was severely cut by a glass shard as a result of a Daisy Hurricane vase exploding in the process of her filing it with water in her kitchen sink. My forensic examination of the glass showed the presence of a flaw in the rim of the vase which severely weakened it. It could have been a manufacturing defect or damaged by an employee while handling it in the store. The case was settled out of court.

12. Glass fracture expert for Hundley and Johnson, P.C. of Richmond, VA for a severe injury to the hand of Mr. Barry B. McGranahan. He was injured while attempting to unscrew the lid of a Worcestershire bottle. My forensic examination showed that the neck of the bottle was too thin to withstand the torque required to unscrew the lid. The Worcestershire sauce acts as a glue when it dries, making the lid very difficult to remove. I am not aware of any law suit against Reckitt Benckiser of Parsippany, NY at this point in time. Mr. McGranahan would be the plaintiff in any law suit.

13. Glass fracture expert for Stoehr and Smith LLC of Duncanville, PA for a severe injury to the hand of Ms. Pamela Zitsch, a potential plaintiff. My examination of the sparkling burgundy bottle that injured her indicated that the bottle was damaged on the inside of its neck as she attempted to open it with a cork screw. The cork was of the type that did not require a cork screw assist. It was shaped like a mushroom. Furthermore, the label clearly indicated that a cork screw should not be used to remove the cork, albeit the print was small. Any complaint against the bottle maker may not be justified.

14. Glass fracture expert for the Law Offices of Paul K. DeGrado of Hackensack, NJ for a serious burn to a child from a fractured tea pot full of hot water. The plaintiffs, Edyta and Simon Ostrowski claimed the Whistling Tea kettle broke while just removing it from the burner. However, my forensic analysis of the fracture pattern showed that the tea kettle was broken from impact which refuted the testimony of the Ostrowski's.

15. Glass fracture expert witness for Holland, Groves, Schneller & Stolze, (Ryan Furness, Esq.) LLC of St. Louis Missouri for the plaintiff Lora Randell v. Oberweis Dairy, Inc. A cold bottle half gallon of chocolate milk exploded in the plaintiff's face (a young child) when she put her hands on the bottle to feel how cold it was. There was not glass saved to analyze. But I did discuss some possible causes and reviewed other cases of similar circumstances.

16. Glass fracture expert for Structured Solutions of Beverly, MA. A glass vanity that was purchased for the Jumeirah Essex House in New York City with the belief that it was fully tempered safety glass fractured into chards when a drinking glass was dropped on it. Mr. Kruppa and I examined over 150 glass vanities in the hotel to determine if they were of safety glass quality.

17. Expert witness of the defense in the case Bizub v. Edinboro County Square Realty. I was hired by Jennifer Keadle Mason and Robert Aspen of Mintzer, Sarowitz, Ledva and Meyers LLP. Ms Bizub, while running down a flight of stairs put her hand through a glass insert in an exterior door. My examination of the glass and the local and state and federal codes in effect at the time showed that all were in compliance. The federal codes requiring the use of tempered glass were not passed by the U.S. Congress until 1976. The apartment building that Ms. Bizub was injured in was built in 1968.

PROFESSIONAL AFFILIATIONS:

- American Ceramic Society – Distinguished Fellow
- NSF University-Industry Center for Glass Research – Past President
- Keramos (Honorary Fraternity)
- President of the NSF Industry-University Center for Glass Research 2003-2004

AWARDS:

- PPG Industries, Inc. Presidents Award - 1987
- Named to Who's Who in Technology - 1972
- PPG Recognition of Excellence Award - 1993
- Named to Madison's Who's Who - 2007

CONTINUING EDUCATION:

Brown belt six-sigma diploma from the University of Tennessee
Statistical analysis from the Dupont In-House Training Association
Quality Management and Applied Statistical Process Control – Crosby Integrity Systems
An Introduction to Multivariate Statistical Process Control – In Control Technologies
Technical Writing -PPG In-house course
Research Project Management – PPG In-house course

ADDITIONAL:

Glass industry consulting for numerous major domestic and European and Asian plate, TV and bottle glass companies in 2003 through 2011.