Remarks to 2009 Beijing International Polyurea Expo and Forum

Lee Bower, President PolyVers International, Strategic Alliance Director PDA

Esteemed Prof. Weibo Huang:
Esteemed Prof. Liming Sheng:
Ladies and gentlemen:
Good morning!

I would like to thank you for your kind invitation to attend and participate in the 2009 China Expo on Polyurea. It is a pleasure for me to return to Beijing and meet with each you this week. Lee and I would like to thank Dr Weibo Huang for his guidance and assistance with the invitation and direction. I have known Dr Huang for over 8 years, worked with him on the PDA US board of directors, and was honored to be asked to write a preface for the monograph Spray Polyurea Elastomer Technology written on polyurea in Chinese, authored by Dr Huang. It is the first and only book on polyurea both in China and the world.

This meeting is yet another historic event in the life of the polyurea industry, and certainly a great milestone in my career with polyurea. Please permit me to explain.

As some of you know, polyurea technology is relatively young in the scope of more traditional coatings technologies such as epoxy and urethanes. As you have learned, spray polyurea was born of technical advances at Texaco Chemical for the RIM industry, dating back in the 1980's. Texaco had incorporated some of their raw materials into this innovation which increased production time of automotive parts, while improving weatherability, impact resistance, and color acceptance. Parts manufactured by this technology included car bumpers, sides and facias, as well as internal molding in the dash and frames.

At this time, a young chemist, Mr. Dudley Primeaux, now known as the "father of polyurea" and a close friend of Dr Huang's, was assigned the project to adapt the polyurea RIM technology into a spray elastomer system. No small feat since at that time the reactivity of polyurea was measured in less than 2 seconds. Chemical modifications to slow the system were developed. Modifiers were developed to increase adhesion, color acceptance, and flow. And more important, spray equipment and guns had to be developed to process this unique system.

At the same time, I was privileged to be the sales and marketing director for the specialty chemicals division of Texaco Chemical, and good or bad, this new technology fell under my group to market and sell. Believe me, as a division of Texaco Chemical with over $100 million in sales, taking a brand new technology with little history and zero successful applications was not easy matter.
I could spend hours talking about the interesting and unique beginning of spray polyurea. Some stories which you would never believe, but they occurred. At that time, we knew nothing of

primers, adhesion promoters, or even surface prep. There was just one equipment manufacturer who provided the pumps and proportioner necessary to spray polyurea. The large international coatings companies ignored us, instead a pig farmer in the mid west thought it might work well in his feeder troughs. An entrepreneurial funeral director in the frozen upper US thought he could preserve deceased bodies by spraying them with polyurea in order to wait until the ground thawed so they could bury them. A small home owner in northern Texas thought if he sprayed his roof with polyurea, he could survive the frequent hail storms prevalent in the area. By the way, that house, sprayed in 1990, still stands today, with its original polyurea roof. Horseshoes, toys, and other insightful but limiting projects were not the types of successes I was looking for. We at Texaco were expecting to witness polyurea step up and take its place along with urethanes and epoxies.

Successes did come however, through the hard work of many individuals who believed in this technology. Sales people literally begged their customers for a chance to coat some new part, old concrete, anything that would benefit from using the attributes of polyurea. And some customers, willing to risk their projects and reputations, slowly began to give polyurea a try. We had no previous case studies, very few real life tests, and a lot of skepticism. Still, small formulators began offering their unique products, expanding the applications where polyurea could be utilized. Raw material suppliers developed new chemicals which would expand our opportunities. Additional equipment suppliers supplied smaller, more efficient machines which allowed more applicators to participate. Interest in the technology increased, a snowball began to roll. A new coatings technology had begun.

Now, with more then just a few formulators, raw material and equipment suppliers, and applicators involved in polyurea, it became evident that a set of standards, criteria, and training was needed by the industry. Unfortunately for this technology, when a failure occurs, it is usually significant and very visible. Despite the cause of a failure, it was always attributed to “Polyurea”, not application, surface prep, or incorrect choice of product. Polyurea was in jeopardy of getting a bad name in the industry.

The Polyurea Development Association (PDA) was born in 1999. A group of individuals just like you sitting out there, came together with the idea that if we all worked together, move aside our competitive instincts, share our successes and failures, we could develop an industrial organization which established approved practices, ensuring the future of this technology.

The goal- to establish universal standards for the application of polyurea, training of the applicators, and a method to ensure consistency in this global market.

First, the definition of Pure Polyurea was developed- “the reaction of and isocyanate prepolymer and an amine”. It is that simple. Hybrids were identified as a blend of a pure polyurea and a urethane. Standards and guidelines were developed by the technical committee. Definitions of terminologies published. The Marketing committee produced brochures still used today. Some of these publications are currently available in English, Italian, German, and Spanish. A PDA website was introduced, and membership in the US grew to over 250 companies. Yearly conventions are held where the sharing of information was available through networking, new technologies and raw materials introduced, successful applications presented, and most important, failures brought to the forefront and discussed. In fact, PDA US just celebrated our 10th anniversary in Albuquerque, New Mexico last month. Dr Huang presented the PDA with a

gift from the Chinese PDA constituents, which is now displayed at the Technical Center in Houston, where all US PDA training is held.

Finally, some well known projects were awarded to polyurea- you may have heard of some; the Boston Tunnel, San Mateo Bridge, and the Pentagon, to name a few. Individuals worked hard to qualify this new technology, displacing tried and true coatings already specified. Interest continued to grow both in the US as well as in Europe and Asia, as the word got out that these jobs were successfully completed and functioning. We then established board chairs for International Directors in the PDA, with Dr Huang among the first to hold a chair from Asia.

Three years ago, Europe found itself in a position where they could support and establish a PDA Europe with the assistance and direction of PDA US. They just completed their second successful convention in Vienna in November. Although they experience some differences from the US in market conditions, terminologies, and standards, the basic concept and by-laws remain the same.

Now I am delighted to see you sitting here, ready to participate in technical sessions and networking over the next few days. You will have a chance to see, first hand, some excellent technical papers and discussions relating to polyurea. I note that the presentations range from raw materials and equipment to actual projects using polyurea. I wish some of our conventions were as well organized as the one I am about to attend.

Following this Expo, Dr Huang has organized a symposium to discuss the possible establishment of a PDA China. Ladies and Gentlemen, this takes personal commitment to the organization and technology. It will not be easy. It will take each of you from the raw material suppliers, to the formulators, and most important, the applicators. You will be asked to give of your time, and yes, money. But as a founding member of PDA US and Strategic Alliance Director of PDA Europe and the US, I can assure you it will benefit your industry, your companies, and you yourself.

I encourage you to ask your questions, participate in the sessions, enjoy your time, and most of all, leave this week with a better sense and appreciation of this exciting technology- Polyurea.

On behalf of Lee Hanson and I, we again thank you for your kind invitation to join you this week. We look forward to meeting each of you, and share our experiences. We wish each of you all the success, and as we depart later in the week, know we have new friends and acquaintances we will cherish forever.

Thank you!

Lee

Lee Bowers
Polyvers International
www.polyvers.com
713.466.4988