

Quality As A Measurement

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Previously I wrote about 7 Key Quality Factors that contractors can use to explore quality in their company. These can be a great start for you in evaluating where you are, and where you want to go. Now let's focus on Measurement. We know that construction is plagued with chaos and inefficiency, but where do we start? Let me tell a story about Frank Gilbreth and his work with Henry Ford.

Frank was a bricklayer and contractor who became an expert in the analysis of human motion. Henry Ford relied on Gilbreth and others to root out worker injuries and to increase efficiencies in his production plants. Ford learned from Gilbreth that parts should come to the worker; that the worker shall never lift more than 35 pounds, and that production areas must be spotless. Any deviation from set tolerances was justification to shut down the production line.

The Ford plant recycled wood crates, metal shavings, and created its own energy--in 1918, long before 'green' technology was even a concept! He did it because after measuring the results of these activities, it improved quality and was the *PROFITABLE* thing to do. Ford measured first the big things, then created processes to standardize them, then measured them again. It would be unthinkable to build a car with little or no processes and measurements, yet we build homes that are far more complex with very few repeatable and measurable processes.

Now consider just one component in a home: a structural shear panel. It's a pretty important thing--it keeps a house from collapsing when the wind blows. It is comprised of simple ingredients: 2x4's, nails, and plywood. It is held to the footings with anchors, and sometimes loads are connected to it at the top, so they don't collapse. Pretty simple? Then why, after building millions of shear panels across America do we have defective shear panel claims in almost every litigation case? Why has the insurance industry spent millions of dollars fixing defective shear panels and homes damaged by their failures? The answer is that Measurement and Process are manufacturing metrics and few builders subscribe to this culture.

If a builder measured the little things that make up a shear panel, if the trade partner verified his measurement (or compliance) of the components, if the next person to see the shear panel was aware of it being "out of tolerance", then the defective shear panel would be no more. We would identify its importance for measurement, we would create processes and tolerances to ensure conformity, and we would simplify the complex or failure-prone parts (like edge nail spacing) to create a bullet-proof, litigation-proof component.

H. James Harrington, a Quality Guru and author of 35 books on Quality said, "Measurement is the first step that leads to control and eventually to improvement. If you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it."

If we don't measure the tolerance of the nail spacing, defects are created.

If we don't measure the plywood width, panels become improperly spliced.

If we don't measure and count the hold-downs, they don't get installed.

Measurement leads to process which leads to simplification--which leads to profit!

You see, Quality is about Measurement.

So let's start focusing our efforts on Measurement Systems. The ability for a builder to prove that measurement is an important business rule is paramount. What is measured, and what those tolerances are, become pretty important.

There are millions of things to measure--where do you start? Well start by measuring things that matter most. Don't know what matters most? Look at your customer service issues and find out how often your homes leak or crack or underperform. Listen to your customers, your insurance underwriter, and your trade partners. Then invest in a Builder Risk Assessment which will help you identify your biggest quality risks. We'll discuss this tool next time.

About Stan Luhr

Stan Luhr is a forensic construction expert with over 30 years of experience in the construction industry. As a forensic expert Mr. Luhr has completed over 4,000 litigation claims ranging up to multi-billion dollar product defect cases. In 1994 he developed the industry's first computerized field QA systems, which eventually became the benchmark for the construction industry. Since then, Mr. Luhr's Quality and risk management processes have been successfully used on over 430,000 homes and commercial buildings, reducing construction defects by over \$9 billion. A nationally recognized trainer, Mr. Luhr has lectured at hundreds of educational conferences including NAHB, PCBC, IRMI, ASQ, Benchmark, & EEBA regarding construction quality, litigation and risk management. He joined AxisPointe in 2011 and serves as the company's CEO.