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NAHB RESEARCH CENTER RESOURCES:

Framing the ISO 9000 Quality Standards: Plan, Do, Check & Act on Quality

Nearly all successful businesses, from the very smallest to the very largest, have quality management systems in place. But what exactly is a quality management system in the home building industry, and are there standards that define such a system?

In 1987, the International Organization for Standardization (ISO) in Geneva, Switzerland, first published the "ISO 9000" series of standards. This was ISO's first venture into the arena of developing quality system standards, as its previous efforts were aimed at developing product standards. The ISO 9000 series rapidly became popular, with many countries adopting them as their National Quality system standard. To date, more than 250,000 organizations in 129 countries have gained certification to the ISO 9000 series of standards in a wide variety of industries.

The ISO 9000 standards were reviewed and revised in 1994, and they are currently under review and will be revised and republished in November 2000. The three primary standards will be: ISO 9000-Quality Management Systems (QMS), Fundamentals and Vocabulary; ISO 9001-QMS, Requirements; and ISO 9004-QMS, Guidance for Performance Improvements. ISO 9001 and ISO 9004 are being developed together, with the

same sequence and structure, to form a consistent pair of standards. ISO 9000 is being developed in parallel with ISO 9001 and 9004 to achieve a coherent terminology in the ISO family.

The ISO 9000 standards are based on eight principles:

- 1. Customer-Focused Organization:** Organizations depend on their customers and therefore should understand current and future customer needs, meet customer requirements and strive to exceed customer expectations.
- 2. Leadership:** Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.
- 3. Involvement of People:** People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit.
- 4. Process Approach:** A desired result is achieved more efficiently when related resources and activities are managed as a process.
- 5. System Approach to Management:** Identifying, understanding and managing a system of interrelated processes for a given objective improves the organization's effectiveness and efficiency.
- 6. Continual Improvement:** Continual improvement should be a permanent objective of the organization.
- 7. Factual Approach to Decision-Making:** Effective

decisions are based on the analysis of data and information.

8. Mutually Beneficial Supplier Relationships: An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

Conceptually, many small businesses have the framework of the ISO requirements integrated into how they currently do business, but they are unaware that most of the work is already done. More companies would most likely apply for ISO certification if they clearly understood what it is and how much their organizations would benefit. The ISO standards do not tell a business how to structure these requirements because all businesses are unique. Instead, they help to establish quality as a foundation for success.

A Quality Management System, which serves as the basis for a successful business, can be summed up in four words: PLAN, DO, CHECK, ACT.

- **PLAN:** Answer the “five W’s” (who, what, where, when, why) and “How,” which will create objectives within your organization to guide what you do. Document these objectives.
- **DO:** This is easy. Simply do what you say. The best way to accomplish this is to document what you do and consistently do the same thing. This will create a standard within any customer-focused organization.
- **CHECK:** Check that you are doing what you say. The product or service should be checked against the customer’s requirements and should be documented. This system can

then be audited to verify that the product or service meets requirements and the standard of doing business is consistent.

- **ACT:** Improve what you do. Identify ways that the system can be improved and revise the system as needed.

Some industries have experienced difficulty in translating the requirements of the ISO 9000 series to their industry, leading to the creation of a number of interpretations, both industry specific, national and international (e.g., a national interpretation by ANSI for education, an international interpretation by ISO for the automotive industry).

Framing, which currently accounts for 15 to 20 percent of the total cost of a house, is one of the most critical factors in construction, affecting cost, cycle time, quality and durability. With this fact in mind, PATH (the Partnership for Advancing Technology in Housing), the NAHB Research Center and the Wood Truss Council of America agreed that implementation of an ISO 9000-based quality management procedure for framing would be of great value to the wood truss industry. These three groups joined forces in 1999 to sponsor a pilot project that would integrate ISO 9000 practices within the framing industry for quality assurance in design, development, production and servicing. Builders, manufacturers, framers, code officials, architects and engineers all agreed to participate in a ten-month process of development, demonstration and deployment.

Under this PATH-supported program, the NAHB Research Center will develop specific tools for the ISO 9000 framing project: a framing quality manual; use-of-materials

documents for basic materials, connectors and hardware; training materials and jobsite inspection procedures/lists; methods that track and monitor quality; and contract templates that assign responsibilities and acceptance. Builders will apply the quality procedures developed under the program to selected homes.

The pilot project's case study report and recommendations for builders and framing contractors will provide several key resources. It will outline alternative strategies for deploying the ISO 9000 technology for the home building industry's framing sector; detail the business benefits of adopting an ISO 9000 quality management approach; describe the availability of tools developed under the program; note the ease and low cost of implementing a quality management system; and cite building code permit and inspection process advantages. A short, benefits-oriented summary will be distributed to framing contractors and other trade contractors and builders at the end of the pilot.

In 1993, the NAHB Research Center launched a National Housing Quality Program that has introduced many of the concepts of the worldwide quality revolution to home building and remodeling. Activities include co-sponsorship of the National Housing Quality Award and the National Remodeling Quality Award. Winning applications for these awards provide a rich source of information on the best quality practices of the best builders. The Research Center publicizes the winning practices throughout the building and remodeling industries. Other activities include a program to certify trade contractors who install products in new homes.

For more information on ISO 9000 and its relevance to the framing industry or on the NAHB Research Center's other quality management services, please call (800) 638-8556.

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