Quality Control in Wood Construction

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Quality is defined as:
“Degree to which a set of inherent characteristics fulfills requirements”
-ISO 9001:2008-

Quality management
... the whole of features and characteristics of a product regarding its ability to meet the quality requirements.
EN ISO 9000

Rules for the organization, implementation and monitoring of measures

What is quality?

Regulations and quality marks

Why quality control?

Why quality control?

What customers want:
- Customer focus and customer service
- Compliance with the contractual agreed quality

What companies want:
- Profitable construction project
- Compliance with the contractual agreed quality

Quality requirements
Quality Control in Wood Construction - Anton Kraler

Quality management - works!

- Quality requirements - present

- Wood Protection
- Moisture Protection
- Fire Protection
- Sound Insulation
- Heat Protection
- Airtightness

Materials for timber constructions

Materials for timber constructions

Support by certified constructions

- Quality criteria for the construction process

architect  construction specialists

expert planners

Fire protection, structural design, building physics, building technology, passive house planners, etc.

Requirements for high quality products

- Quality Awareness
  - The company management must want quality
- Quality Production
  - Specialization, prefabrication
- Quality Products
  - Clear definition, e.g. wall elements with quality certification labels
- Quality Control
  - Internal and external controlling (external monitoring)
- Quality Management
  - Procedures: Organization and implementation of measures
Quality Control

Quality Monitoring during Production and Construction

Damage caused by leakages

Quality Control

Quality Monitoring during production and construction

Damage caused by leakages
Why quality control? Why airtightness?

Problem: A gap with airflow from humid side

outside: 0°C, 80% r. F.
inside: 20°C, 50% r. F.

1 mm gap in construction

360 g water/day/m²

For comparison: with vapor diffusion, only 1 g water/day/m²

Quality assurance by quality monitoring

Measuring System
- Door frame with a membrane
- Measuring Instrument (data capture and evaluation)
- Fan

Aids and Appliances
- Fog generator
- Flow meter

Quality control – airtightness
Why quality control? Why airtightness?

Heat loss through leakage

4.8 times more heat is lost across the gap than over the entire surface of 1m² of insulation.

Example:
U-Value (calculated) = 0.30 W/m²K
U-Value with the gap (0.30 W/m²K x 4.8) = 1.44 W/m²K

outside: 0°C, 80% r. F.; inside: 20°C, 50% r. F.;
Example: roof connection

Example: faultless execution

Quality control: heating, water, ventilation

Thank you for your attention