



QUALICheck
Towards better quality and compliance

Compliance and quality of the works in relation to renewables in multi-energy systems


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Multi-energy systems

Heating, domestic hot water, cooling, ventilation

Fossil fuels, biomass, electricity (heat pumps), solar thermal

Quality chain:

- Quality of **products**, quality of **product information**
- Quality of **system design** (integrated to building)
- Quality of **installation** and **commissioning**
- Checking quality
- **Compliance of EPC input data**

Blue: examples
documented
in Qualicheck

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Quality of products

- Quality management systems of manufacturers (ISO 9001 certified)
- Certification of products by a third party:
 - Testing according to standards - usually EN - by an accredited laboratory (ISO 17025)
 - Audits of manufacturing plants
 - Accredited certification bodies (ISO 17065)

Examples : Eurovent certified performance, Solar Keymark



Test for the certification of a boiler
In CETIAT laboratory

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Quality of product information

- Manufacturers documentation
(example : French voluntary scheme for harmonised publication of ventilation product data)
- BIM files
- Product database:
 - Those of certification bodies
 - Sometimes implemented from a will of public authorities (example : in Belgium and in the U.K.)
 - Sometimes managed by professional associations (example : French database for heating systems)



BIM files for download
Source : www.polantis.com

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Quality of system design

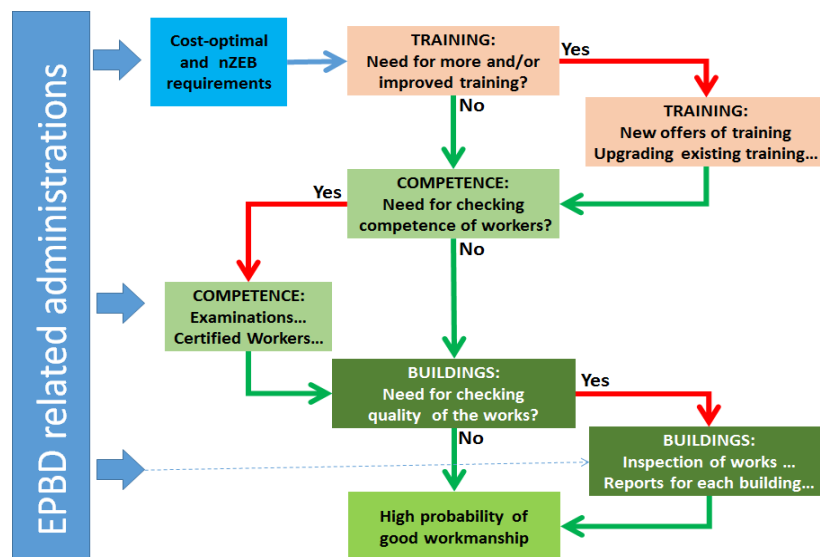
- Training of engineers
- Qualification of persons or companies
- BIM to reduce the risk of non-quality in system design?



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Quality of the works





Quality of installation and commissioning

- Training of workers:
 - By product manufacturers
 - By training bodies
 - Role of public authorities
- Qualification of persons or companies:
 - Example : [French scheme RGE](#)
- Professional rules, guidelines:
 - Exemple : [French PACTE programme](#)
- Commissioning procedures
- Role of BIM, smartphones and tablets, internet of things ?



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Checking quality


- Self-control
 - Check by an independent third-party
 - Check by the customer (or his representative)
-
- When to check?
 - How to check? Random checking?
 - Penalties in case of non-quality?



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Source book on quality of the works




Source book on Guidelines for better enforcement of quality of the works

Draft report for discussion with stakeholders, 30 March 2016
A final report, including information from other expert-works and feedback from stakeholders, is planned to be published in February 2017.

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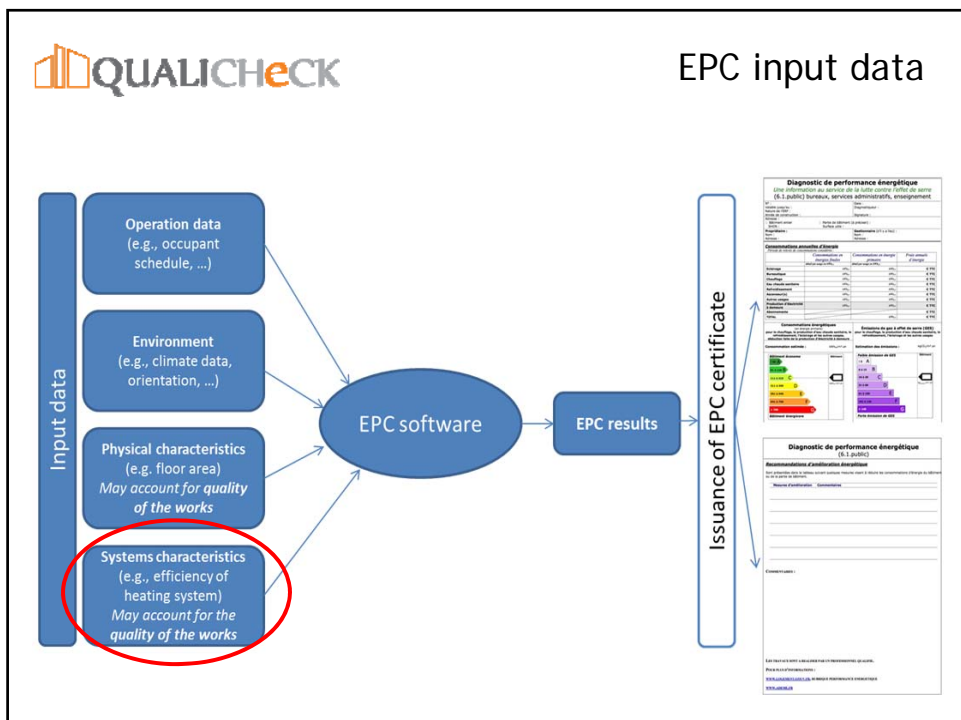
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Extract from contents:

3. Reasons for good/poor quality of works
4. Overall philosophy regarding improved boundary conditions for a better quality of the work
5. Best practice (Part 1) - Procedures to obtain and prove good quality of the works
6. Best practice (Part 2) - Robust legal procedures for handling non-compliance
7. Best practice (Part 3) - Operational framework for better compliance and effective penalties





QUALICheck Compliance of EPC input data

Source of information on product/system	Ways to prove compliance		
	Declaration that procedure has been followed	Independent third-party control	Proven competence of persons/companies
Manufacturer documentation, BIM files	X	X	X
Product database	X	X	X
Recorded on site	X	X	X
Measured on site	X	X	X
Fixed by legislation (default values, fixed average values, pre-calculated values)	X	X	X

If foreseen by the applicable legislation

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Source book on the compliance of Energy Performance Certificates

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towards better quality and compliance

Source book for improved compliance of Energy Performance Certificates (EPCs) of buildings

DRAFT

ZIELAUSWEIS

Draft report for discussion with stakeholders, 4 March 2016
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