

Key features for successful frameworks for effective compliance

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Overall context regarding “compliance”

EPBD related administrations

- ... impose cost-optimal and NZEB requirements
- ... hope that there is a “good quality of the works”

Incentive schemes, private builders, ...

- ... impose energy related requirements
- ... impose/expect a “good quality of the works”

EPC compliance and QUALICHeCK

QUALICHeCK aims at answering the following question:

- How to make sure that **minimum energy performance requirements** for new buildings and major renovations **are actually met** when calculating the EPC according to EPBD 2010/31/EU?
- **Compliance is demonstrated by** fulfilling defined minimum requirements at different levels, e.g. maximum allowed specific heat transmission losses, maximum U-values of the envelope elements, maximum annual heat demand for space heating and for cooling, maximum primary energy for operation of building systems (HVAC and lighting), with an EPC determined according to the existing rules.

Three aspects of non-compliance

- **No documentation / no reporting:** required evidence (documents, ...) is not provided.
 - In case of EPC: EPC is not available.
- **Wrong declaration / wrong reporting:** there can be substantial differences between the declared performances and the performances on the ground.
 - In case of EPC: The information in the EPC is not correct.
- **Not meeting the performance requirements:** there can be a clear evidence that the required performances are not achieved.
 - In case of EPC: The EPC shows that the legal requirements in terms of energy performance are not met.

In all cases it is important to have a sanctioning framework in place **in order to drive the market towards good energy efficiency performances.**

Why do we need a consistent EPC framework?

- EPC is a key policy instrument to achieve the **transition towards more energy efficient buildings and nearly zero energy buildings**
- EPCs display the energy performance of a building **to take it into account in decision-making** whether to rent or buy a building or a building unit
- Lessons learnt: The **EPC must be trusted to be effective**
- We want:
 - **EPCs calculated according the legal procedures**
 - **Good quality of the works** (“to get in reality what is promised on paper”)
- At the moment there is still **some room for improvement: How to guarantee such achievements in a pragmatic and cost-effective way?**

Sources of mistakes resulting in wrong EPCs

Lack of quality of input data: default values, database,...; EPC could be C or B

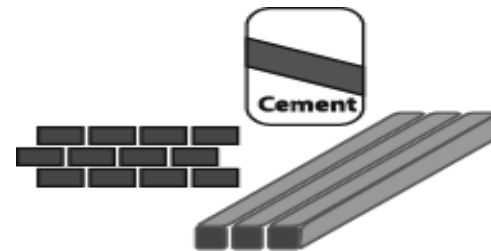
Deviation from plan (design changes): Different products with worse energy efficiency performance than planned

Lack of quality of input data: default values, measurements, database,...; EPC could be C or B

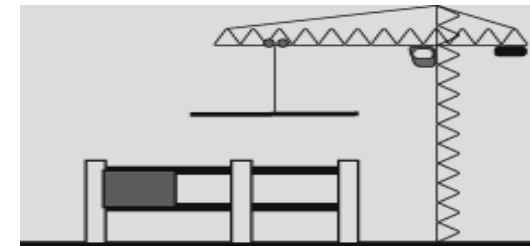
Lack of quality of the works (Mistakes during construction such as leakages, wrong installations, etc.): EPC could even miss minimum requirements



Building design/ EPC calculation



Material/component procurement



Building construction

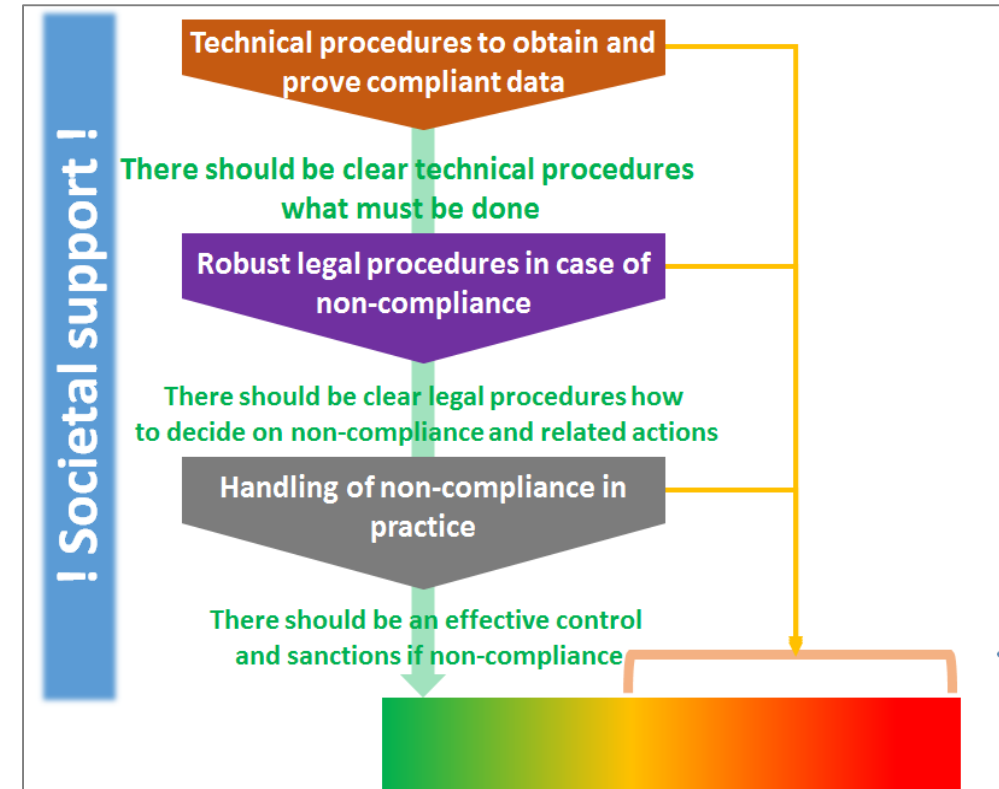
More information on quality of the works:
presentation by Hans Erhorn

More information on quality of input data:
presentation by François Durier

Elements of effective compliance frameworks

A three-step approach has been identified how to achieve good compliance:

- There should be clear procedures what must be done in order to determine EPC input data
- There should be clear legal procedures how to decide on non-compliance and related actions
- There should be effective control and sanctioning mechanisms to be applied in cases of non-compliance



In order to achieve good compliance, societal support is important, meaning that stakeholders understand and accept the need for energy efficiency requirements, the need for compliance and enforcement.

Two QUALICHeCK source books respond to this challenge ...

... PRODUCTS

Efficiency of a heat exchanger
Airtightness of a building

Procedures to obtain and prove
compliant data

PART 1

... THE WORKS

Possibility to have
efficient maintenance

Technical procedures to obtain /
prove quality of the works

There should be clear technical procedures what must be done

PART 2

Robust documented procedures for handling non-compliance

There should be clear legal procedures how
to decide on non-compliance and related actions

PART 3

Handling of non-compliance in practice

There should be an effective control and sanctions if non-compliance

Voluntary quality
frameworks

Mandatory quality
frameworks

Control of compliance
by public administration

Third party control of
compliance

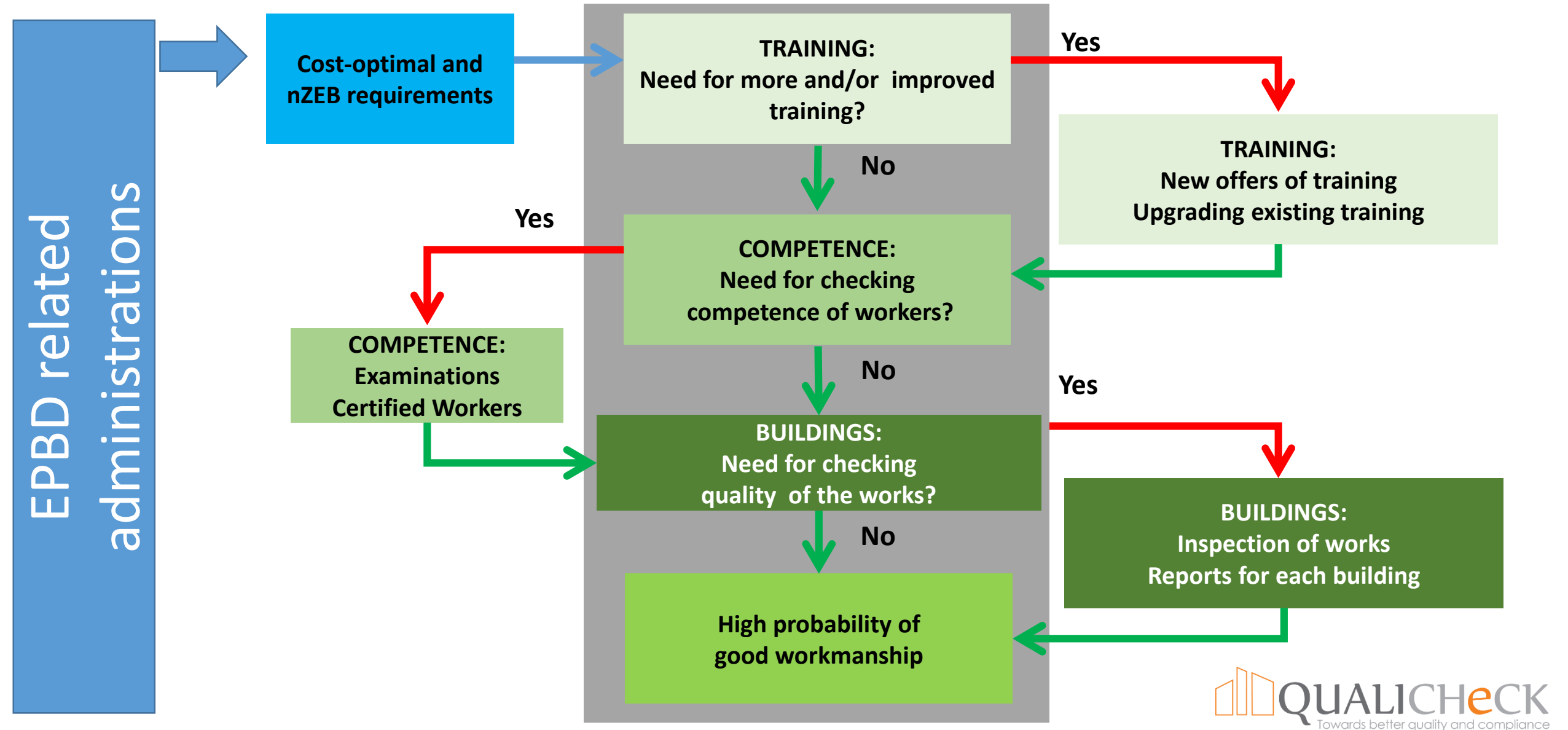
Elements of a compliance framework - examples

Potential quality / compliance problem	How to ensure quality / compliance	How to check compliance	Sanction in case of non-compliance
EPC does not correspond with energy performance of actual building (as-built)	Quality of input data in the design phase and in the completion phase: reduce the range of interpretation in documents, provide third party controlled data, ...	Random check of EPC by public authority regarding correctness of entire EPC (e.g. recalculation based on data from measurements)	EPC expert (in case of faulty EPC): Warning - training course - fine - withdrawal of licence
Products / components built in the wrong way	Qualified workforce (certified / trained workers) for construction Qualified testers (competent / certified testers) for measuring as-built situation	Measuring/testing quality by third party control scheme (e.g. competent tester schemes): (*) airtightness (*) U-values of built-in windows (*) and use data for updating EPC	Building owner: EPC is rejected and must be submitted again No energy-related financial support / finance

There is not always the need for a compliance framework - focus on crucial aspects

- Example: thermal bridges
 - **Aspect 1: condensation and mould growth**
 - Awareness raising is crucial
 - Competence is required
 - Liabilities can be such that one will take care of it without third party control
 - **Aspect 2: energy losses**
 - Awareness raising is crucial
 - Competence is required
 - In practice not evident to assume that one handle thermal bridges correctly without third party control
- It is more a continuum from almost no need for attention to quality till a very strict compliance framework → **pragmatic, cost-effective and appropriate approaches**

Effective compliance frameworks focus on crucial aspects



Thank you for your attention!



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