

Case study

Application of International Design Standards in Danish National Building Regulations

Country: Denmark

Level: National

SDG Addressed: SDG 11 – Sustainable Cities and Communities

Summary

The objective of this case is to demonstrate the use of international design standards in national building regulations. The case will specifically address the application of the Eurocodes, which are standards specifying structural design. International design standards are used to fulfil one of the main purposes of the Building Regulation, namely to ensure that buildings are structurally sound and thus safe for people to use. Furthermore, the increased use of international design standards supports international competition. When the Danish Building Regulation refers to European and international design standards, they achieve legal status. However, it is still possible to fulfil the performance-based provisions with different methods if it is documented that the purpose of the requirements has been fulfilled otherwise, according to the NLT of the European Commission.

Background

The goal of using international design standards is to ensure high quality and a common understanding across the construction activities. Most importantly, the standards are used to describe how the performance-based requirements in the Building Regulation can be fulfilled and documented. For several years there has been a political interest in increasing the use of international standards, among other reasons to promote competition. Therefore, over the last decade there has been an increased effort to replace national standards with relevant European and international standards while considering the main aim of ensuring that buildings are healthy and safe for people to use.

Strategy

The Danish Building Regulation refers to many relevant design standards, including the Eurocodes. The Eurocodes are implemented directly into the requirements. The Eurocodes are common European standards specifying how structural design should be conducted within the EU. The implementation of Eurocodes by Member States is voluntary in that they do not build on EU law. However, most Member States have implemented Eurocodes.

Results and Impact

The impact of using the Eurocodes as part of national regulation can be:

- The performance-based requirements enable builders to choose different approaches to fulfilling the requirements. However, this can make it more difficult to prove fulfilment of requirements. This flexibility is one of the reasons why the Building Regulation refers to international design standards that can be used to document compliance with requirements, including Eurocodes with regards to structural safety.
- It reduces barriers to entering the Danish building market, thereby increasing competition.

Challenges and lessons learned

When implementing international design standards into national regulation it is important to make sure, that the standards fit the intended purpose and consider relevant national specificities such as building tradition, the surrounding infrastructure and weather conditions. This can result in national annexes to a standard or that sometimes only some parts of the standard are implemented.

The Eurocodes contain some areas where the Member States can supplement the standards with national values, which must be considered when implementing the standards. However, this enables the standards to match the specific national climatic and seismic conditions.

Potential for Replication

Since the Eurocodes are written as structural norms for all of Europe, the Danish implementation can be replicated in most European countries.

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