

Building and ductwork airtightness in Belgium: national trends and requirements

Liesje Van Gelder^{*1}, Maarten De Strycker¹, Christophe Delmotte², and Arnold Janssens³

*1 BCCA
Hermeslaan 9
1831 Diegem, Belgium
Corresponding author: lvg@bccca.be

*2 BBRI
Avenue P. Holoffe 21
1342 Limelette, Belgium*

*3 UGent, Research group building physics
Campus UFO - Technicum (Blok 4)
Sint Pietersnieuwstraat 41
9000 Gent, Belgium*

FOREWORD

The AIVC is preparing a series of VIP on national regulations and trends in airtightness for various countries (numbered VIP 45.XX), detailing for both building and ductwork airtightness:

- the national requirements and drivers (regulations, incentives, justifications and sanctions)
- whether it is taken into account in the energy performance calculations and how;
- the test protocol (testers qualifications, national guidelines, requirements on measuring devices);
- the tests already performed and whether there is a results database;
- key documents.

This presentation focuses on the airtightness trends in Belgium.

INTRODUCTION

This paper provides an overview of requirements and guidelines for building and ductwork airtightness in Belgium and observed trends in this airtightness. Although guidelines are generally published on national level in Belgium, building regulation differs from one region to another.

BUILDING AIRTIGHTNESS

In all three Belgian Regions (Flanders, Walloon and Brussels), testing is strongly recommended because of a high default by lack of a test.

The major change regarding airtightness in Flanders was the implementation of the quality framework in 2015 including the qualification of airtightness testers and registration of all tests to facilitate random on site and desktop audits by the quality framework organization. Since 2018, requirements on the global performance of the building envelope (S-level, taking into account thermal insulation, airtightness, solar gains, etc.) were set, which made airtightness testing implicitly mandatory for every new residential building in Flanders. Since 2015, the airtightness of buildings in Flanders seems quite steady and a further improvement in terms of v_{50} -value and number of tests seems unrealistic.

There are no changes planned regarding regulation in the near future.

DUCTWORK AIRTIGHTNESS

In contrast to building airtightness, ductwork airtightness is much less promoted in Belgium. Despite its importance for well working ventilation systems at low power, the impact of this ductwork airtightness is only limited in the Energy Performance Regulation. If (although only in rare cases) a ductwork airtightness measurement is carried out in residential buildings, it can be valorised through a reduction in the factor m , which is a multiplication factor valorising the execution quality of the installed ventilation system. Ductwork airtightness measurements in non-residential buildings however cannot be valorised in energy performance calculations. There is no evolution to be expected regarding ductwork airtightness.

KEYWORDS

Building airtightness, ductwork airtightness, regulation, trends, Belgium