



REQUIREMENTS AND COMPETENT TESTER SCHEMES FOR BUILDING AIRTIGHTNESS MEASUREMENT

Comparison of approaches in various
European countries

Analysis of answers of airtightness associations
representatives performed by:

Valérie Leprince, Maria Kapsalaki, Rémi Carrié



Airtightness Testers Association Committee



- Set up and hosted within TightVent
 - At present, the participants are from
 - Belgium, Czech Republic, Denmark, France, Germany, Ireland, Poland, Sweden, and the UK
 - Contacts with Estonia, Norway, Netherlands, Italy
- The scope includes various aspects:
 - airtightness requirements in the countries involved
 - competent tester schemes in the countries involved
 - applicable standards and guidelines for testing
 - collection of relevant guidance and training documents
- Since September 2012, the committee has met four times (via internet) and first physical meeting held in June 2013



Competent tester schemes

- Specific interest among the Airtightness Testers Association Committee
- Why?
 - Legal issues arising with requirements
 - Motivations for cheating test results
 - Competition between builders and between testers



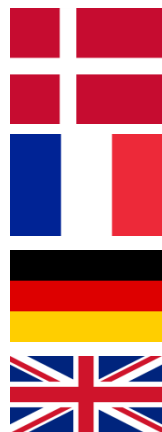
Presentation

- The objective of this study is to compare approaches for requirements and competent tester schemes for building airtightness in various European countries.
- Most of questions were yes/no questions to ease the comparison
- Special thanks to the persons who have kindly answered the questionnaire:
 - Xavier Loncour (CSTC), Belgium
 - Jiri Novak (FSV, CVUT), Czech Republic
 - Walter Sebastian (Klimaskaerm), Denmark
 - Valerie Leprince (PLEIAQ), France
 - Oliver Solcher (FliB), Germany
 - Eva Sikander (SP), Sweden
 - Rob Coxon (ATTMA), UK



Answers from 7 countries

- A competent tester scheme exists in:



- **Denmark:** Klimaskerm in collaboration with Byggeriets Kvalitetskontrol* and DS Certificering**
- **France:** Qualibat mesureur bâtiment 8711
- **Germany:** Zertifizierter Prüfer der Gebäude-Luftdichtheit im Sinne der Energieeinsparverordnung (FliB e.V.)
- **UK:** BINDT/ATTMA



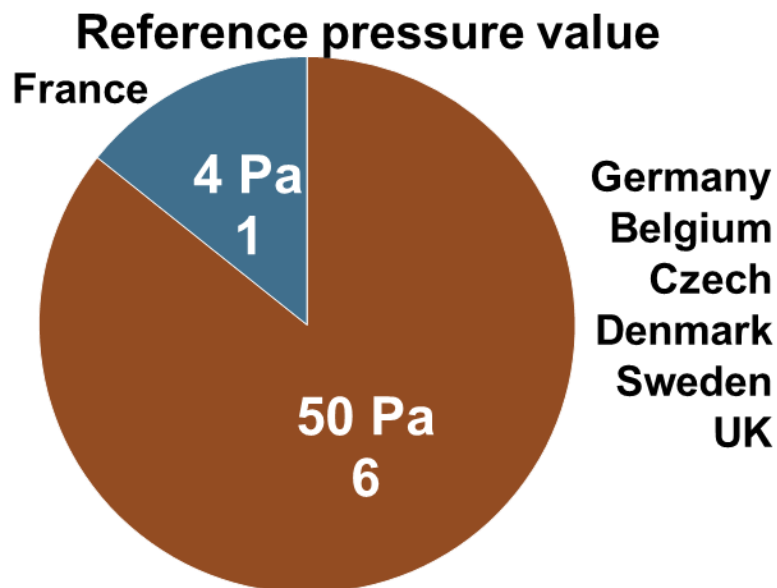
- No tester scheme but association with ethical code in:
 - **Czech republic:** membership in the Association Blower Door CZ



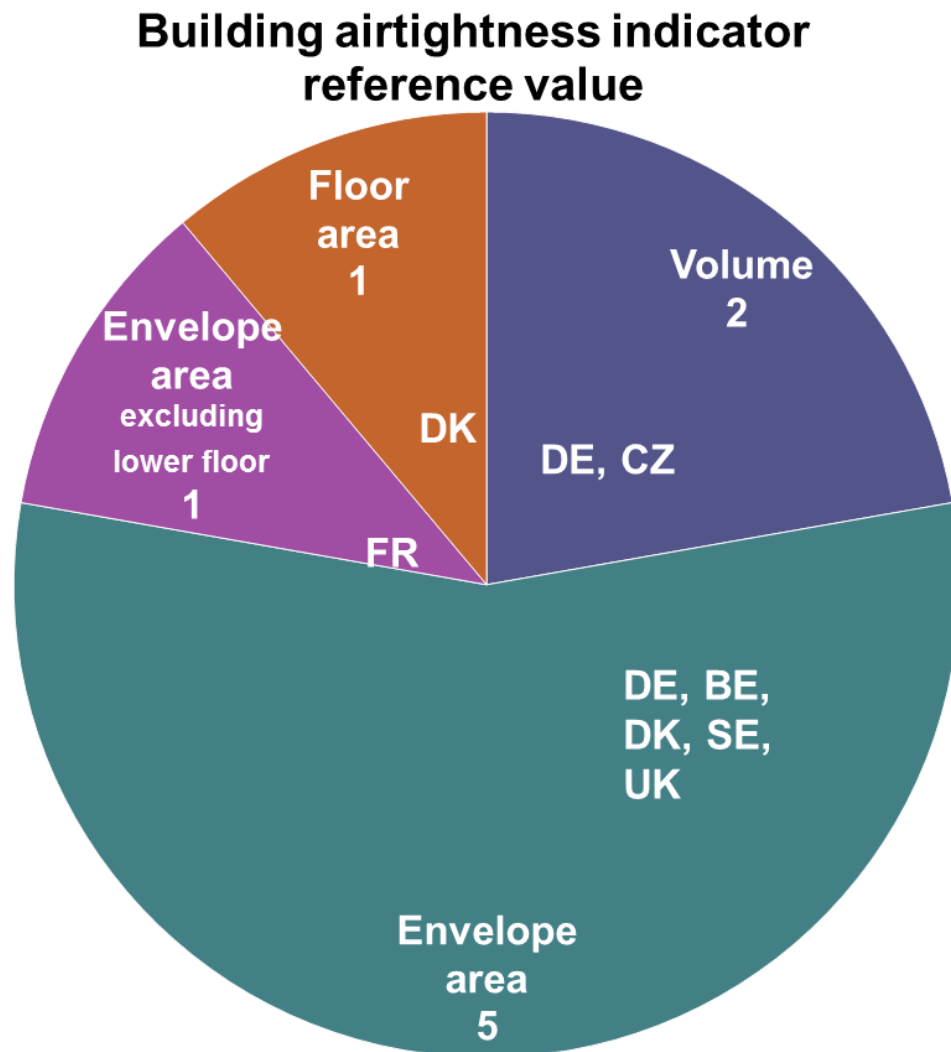
- No scheme yet in:
 - **Belgium** and **Sweden** but early plan to develop a “competent tester scheme”



Airtightness reference



- 6 out of 7 countries have at least one indicator that use the envelope area as reference value
- 6 out of 7 countries have a reference pressure value at 50 Pa

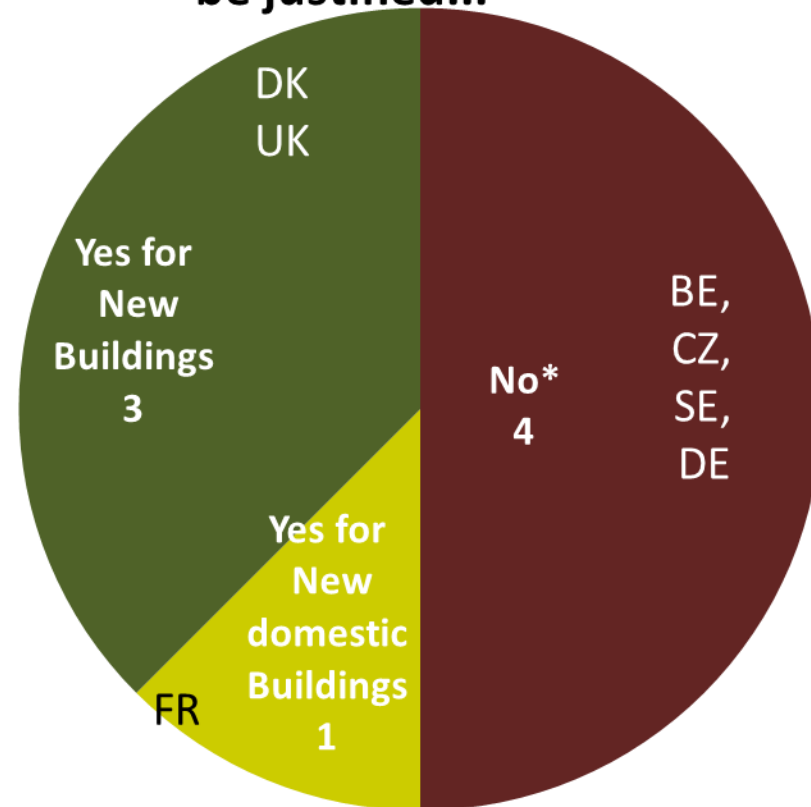




Minimum requirement

Minimum requirements must be justified...

- **Czech republic**
 - minimum recommendation for new* buildings of all type but not have to be justified
- Only **France** proposes an alternative to testing to justify compliance with airtightness requirements
- **Scotland** has some specificities

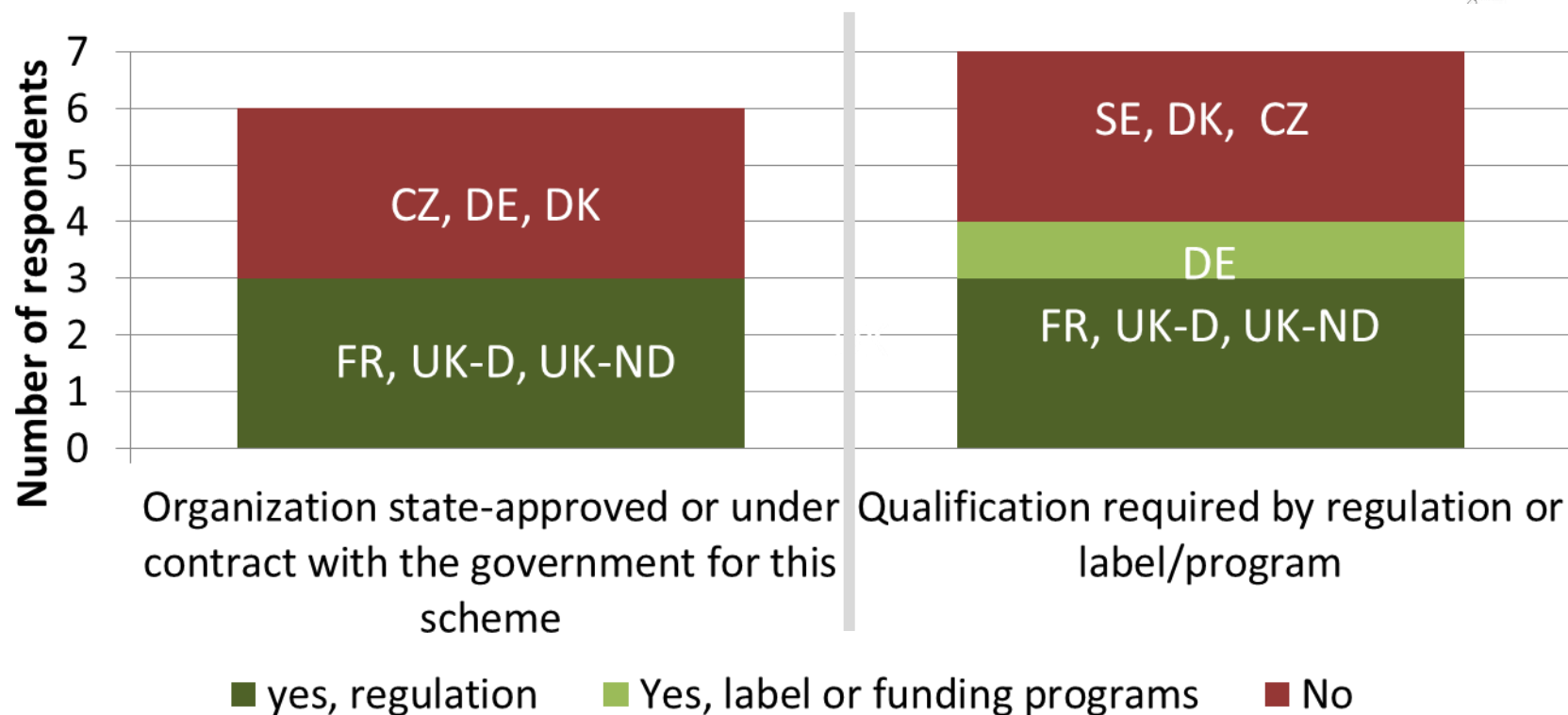


* Only for specific cases such as Passive houses, low-energy buildings, funding programs

* Czech republic has also requirement for refurbishment



Competent tester scheme

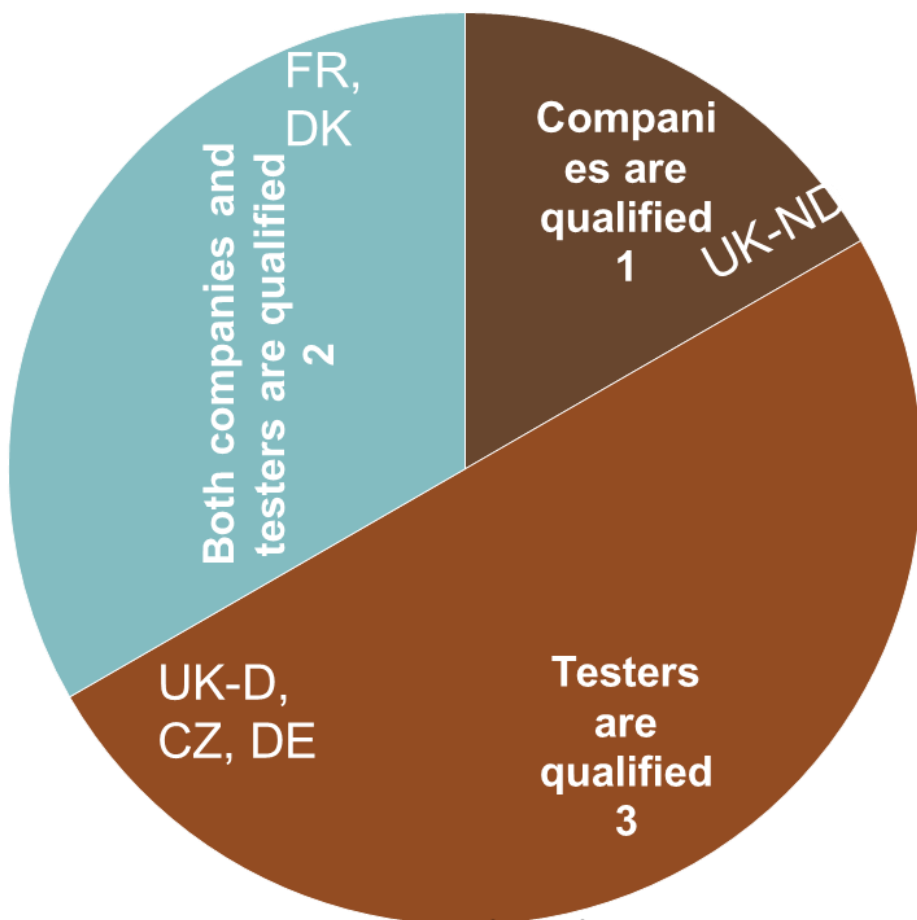


If the qualification is required by a regulation or a label, it always requires independent testing

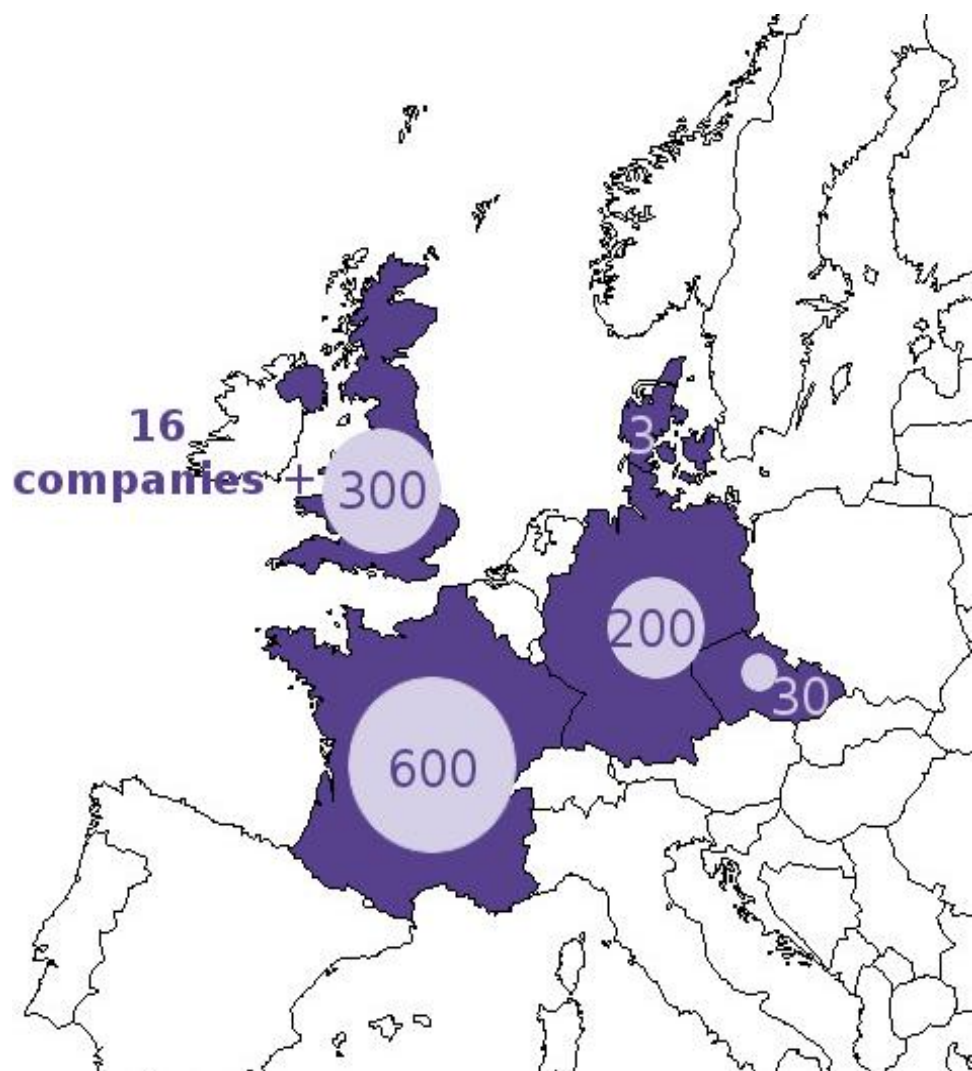
Qualified testers



Who is qualified?



In UK, testers are qualified for domestic buildings and companies for non-domestic

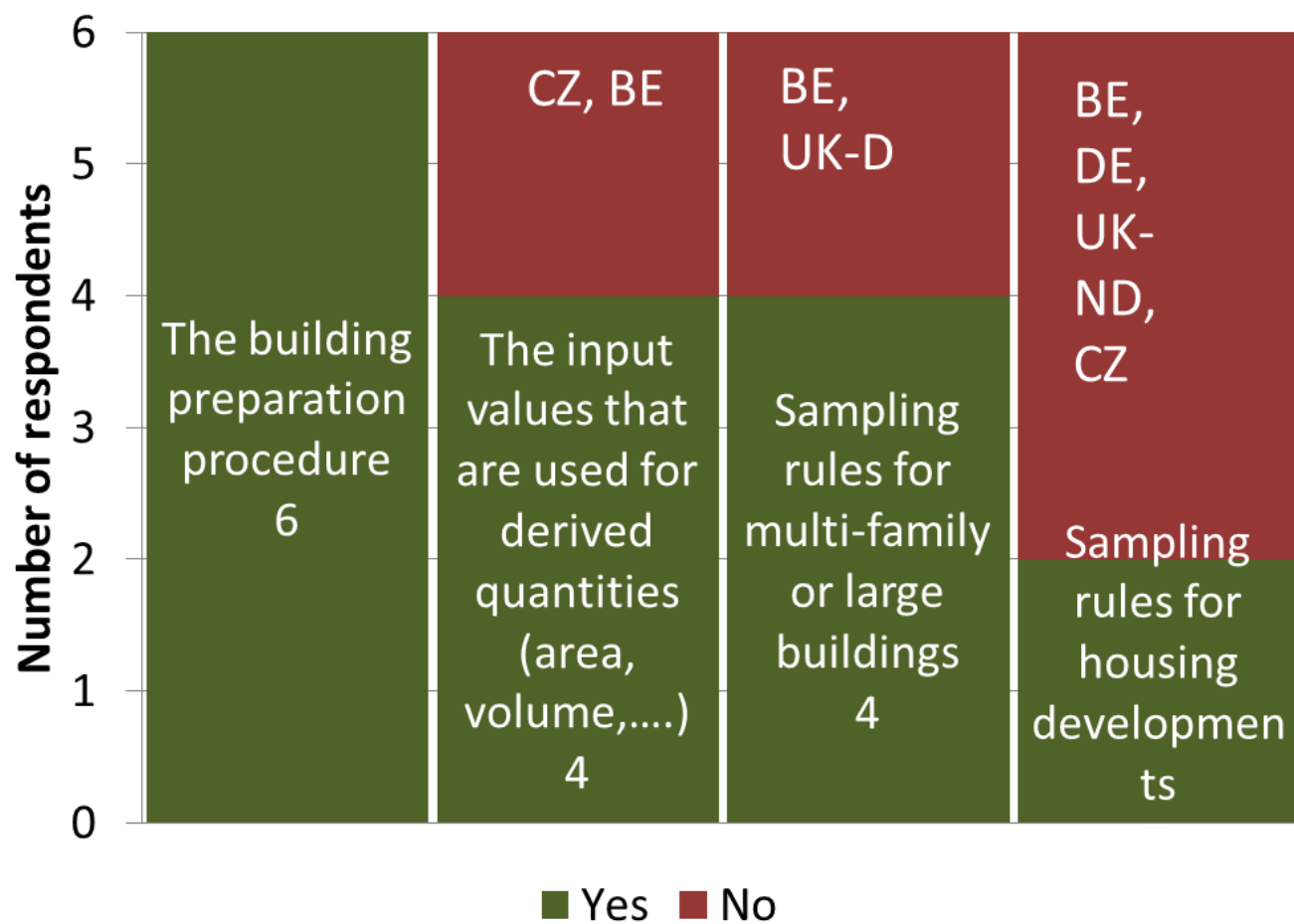




Technical documents beyond measurement standards

Exist in every country except in Denmark
(in preparation)

Technical document specify ...

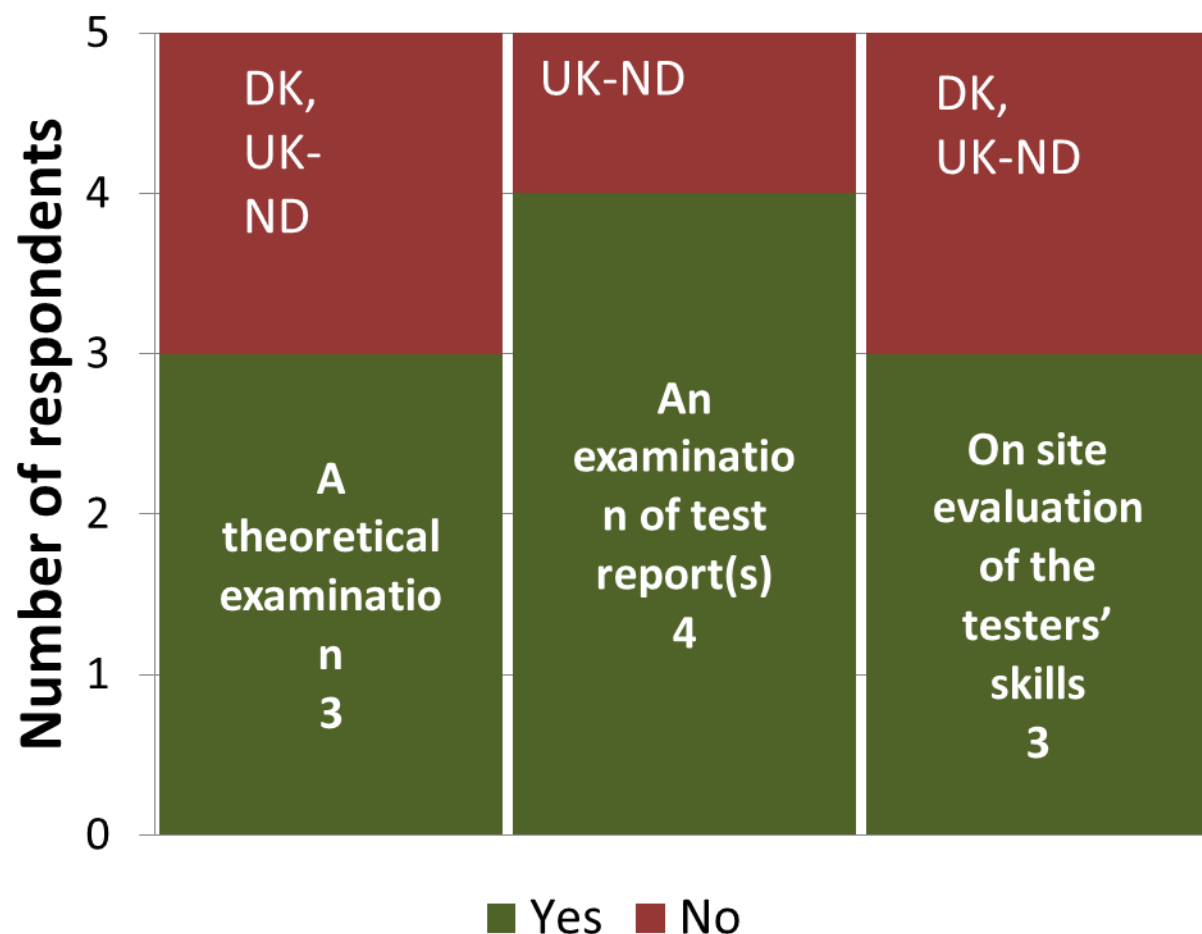




Training programme

- **Duration:**
 - 2 to 4 days
- **Cost:**
 - 1000 to 2100 €
- **Validity limit:**
 - only for Germany: 12 month
- Qualification scheme does not include training in CZ
- In UK no scheme for non-domestic: depends on the company (UKAS)

Training validations include



Additional information in annexes

- Non systematic testing and cross-checking
- Testers profiles
- Qualification requirements
- Airtightness networks
- Training content



THANK YOU FOR YOUR ATTENTION

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ANNEXES

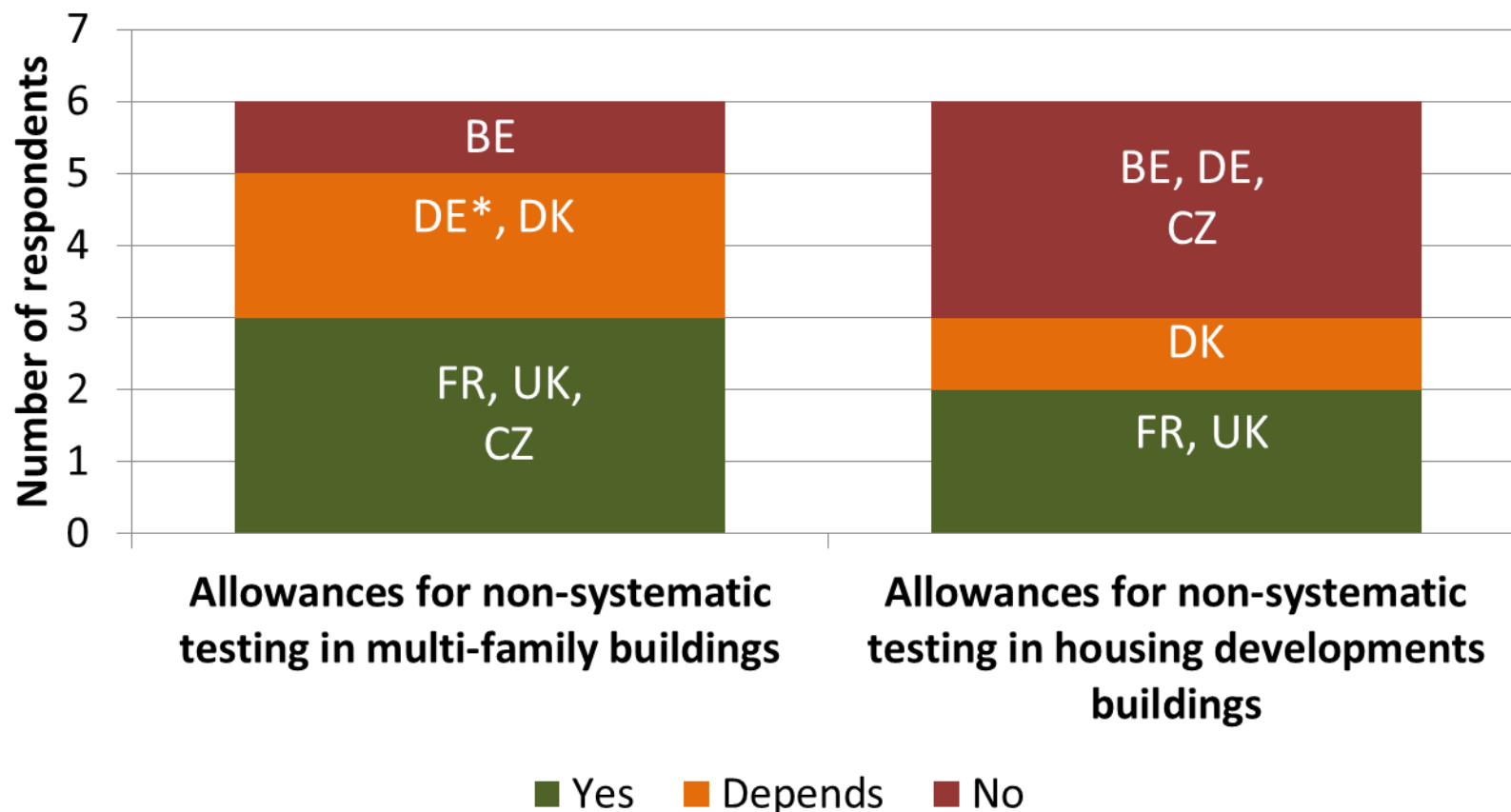


Default values

- 5 out of 6 countries have default values for various cases
 - Non- Domestic buildings (France)
 - Small developments: 1 or 2 dwelling and less than 500 m² non-residential buildings (UK)
 - In all cases (Belgium, Germany)
 - To be used in the calculation before the test is done (Czech passive and low energy buildings)
- For all of them if a different value is used in the EP-calculation it has to be justified in general with testing



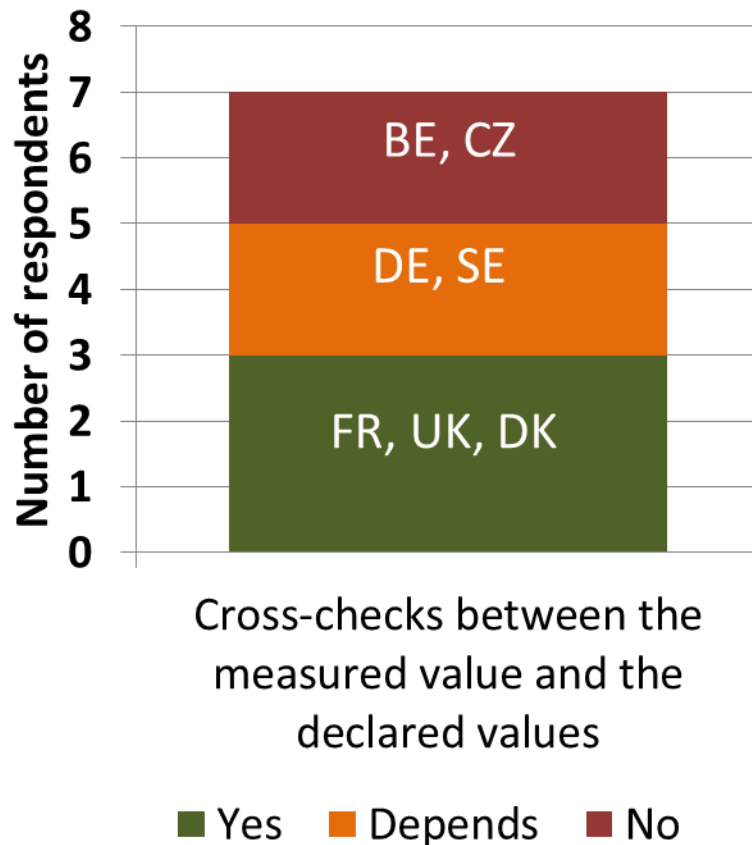
Non-systematic testing and cross-checking



*: No regulation for Sampling in Germany, but there is common practices in funding programs



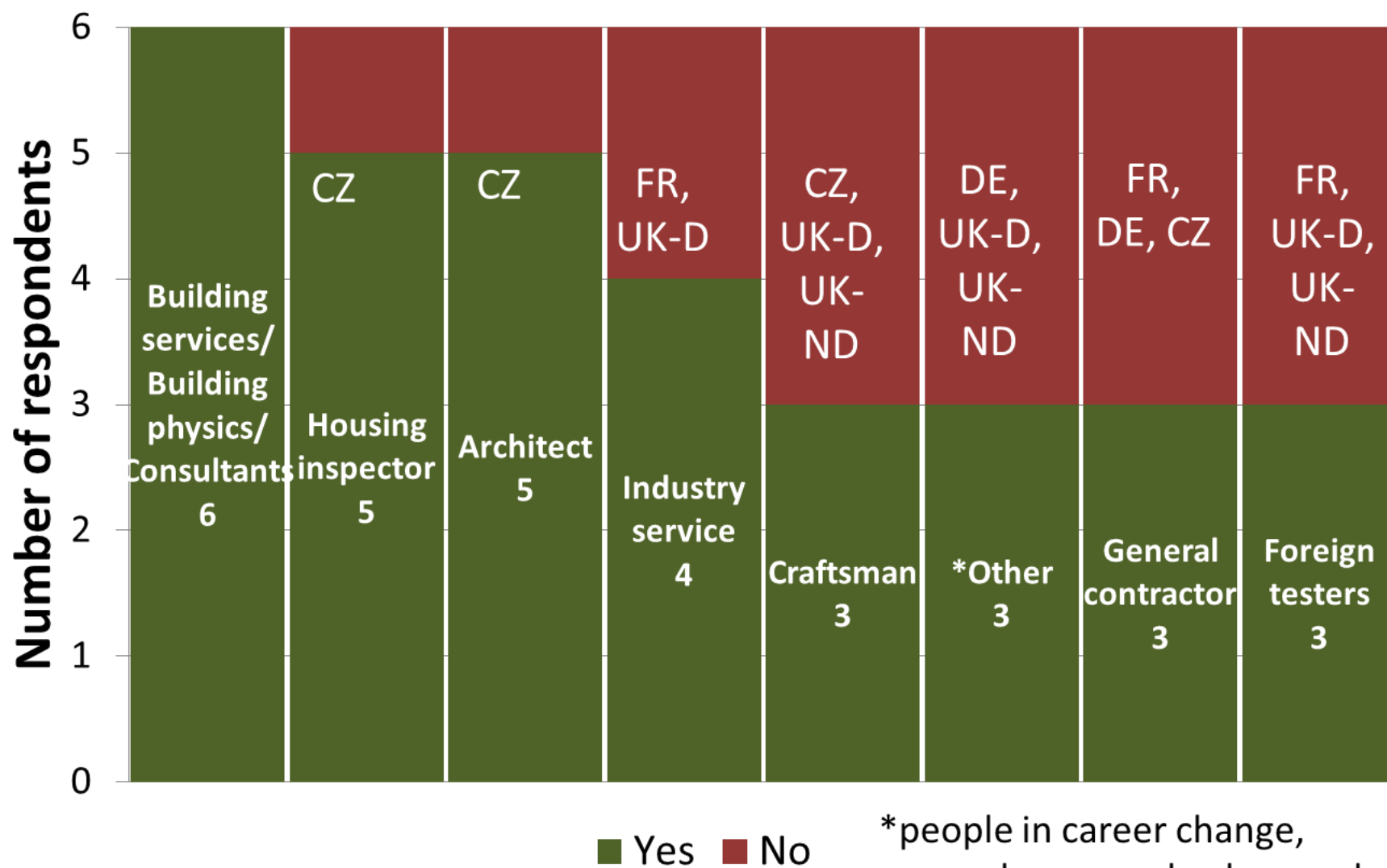
Cross-checking



- Sweden: usually only a check by the developer
- Germany: cross-checking only for passiv'haus



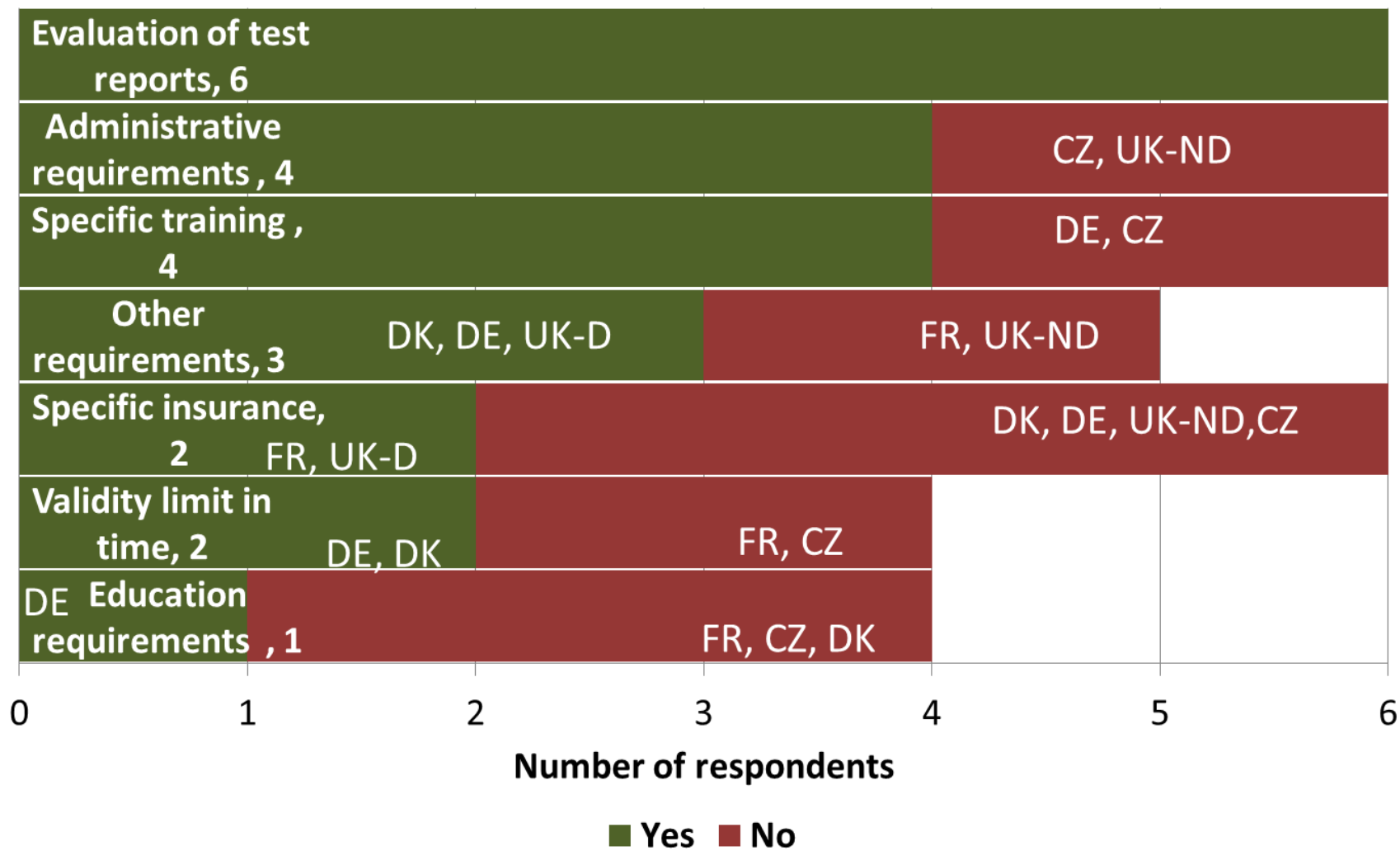
Testers profile



*people in career change, researchers, any background

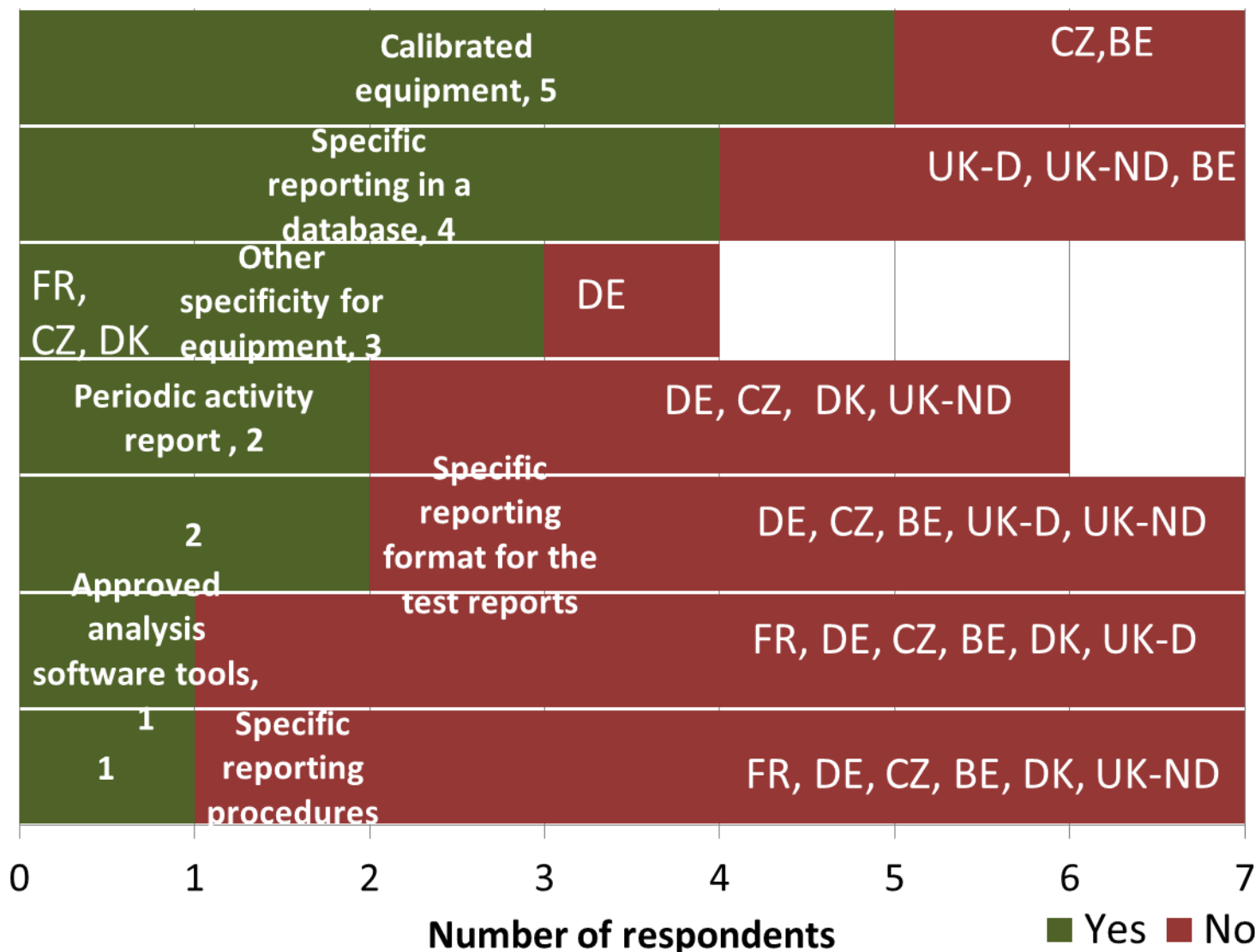


Qualification requirements





Scheme requirements

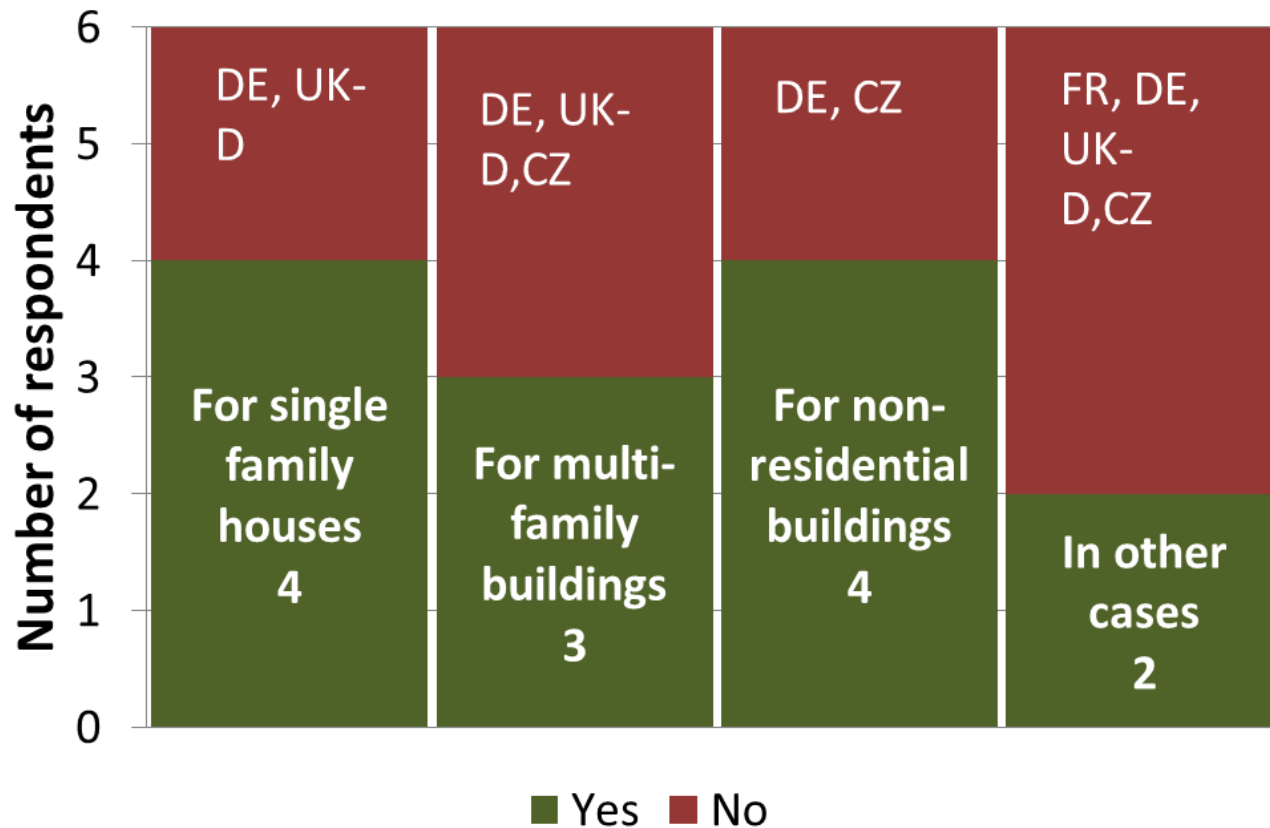


- For Germany, the proof of calibration is not required, tester must give calibration date
- For UK non-domestic, companies have to be accredited by UKAS



Qualification requirements

Tester must justify experience to be qualified for certain types of buildings:

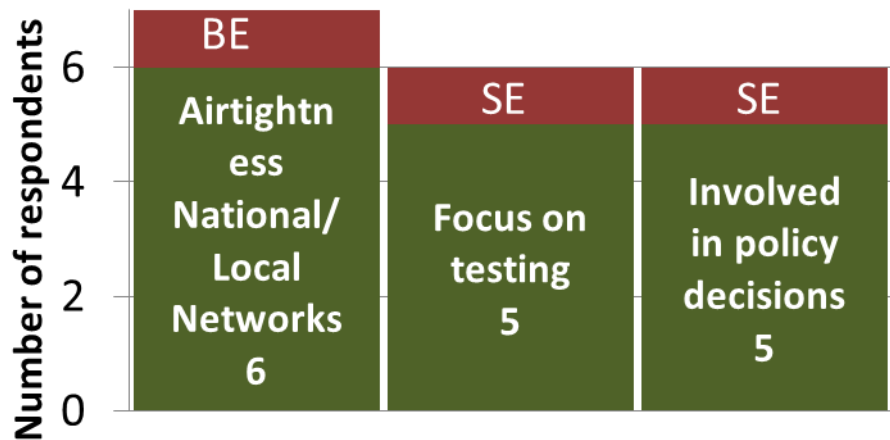


- In France the qualification for multi-family and non-domestic buildings is optional and not required in the EP-regulation context



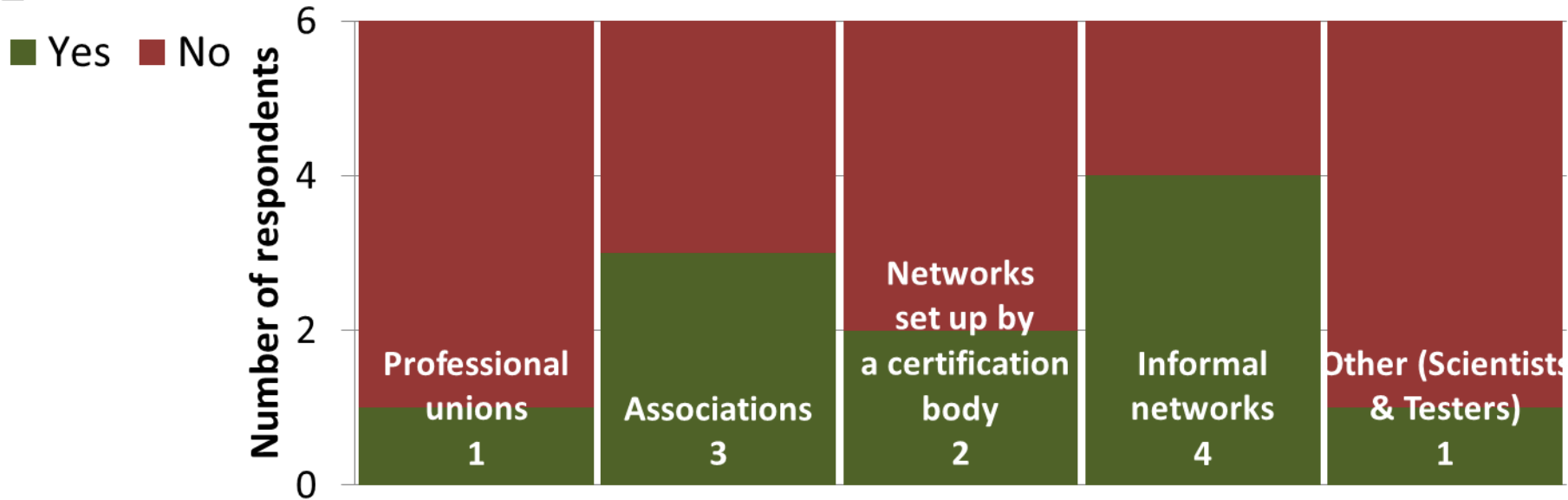
Airtightness networks

Network presence and activities



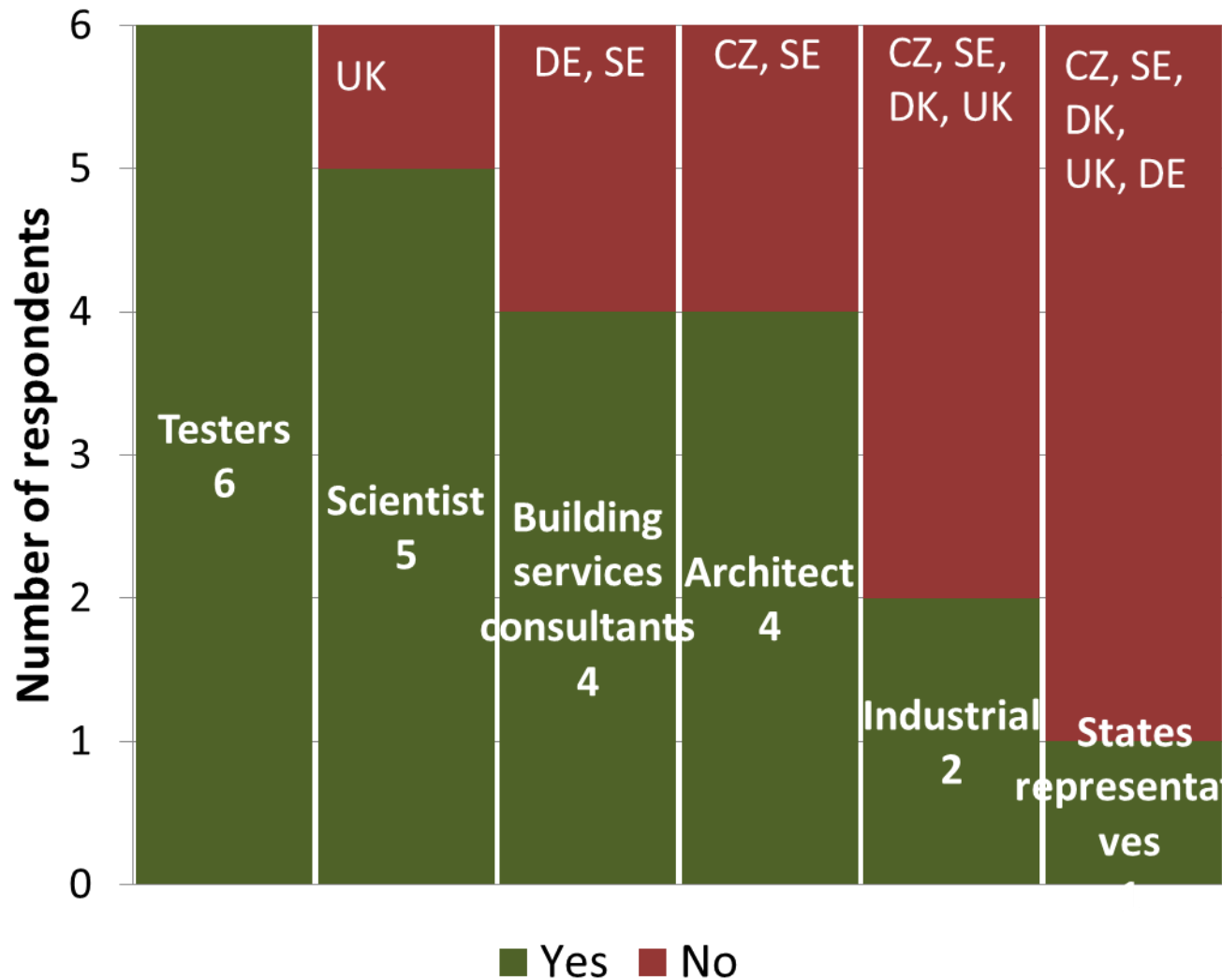
- Impact in national regulation indirectly for UK and Czech Republic
- No answer for Belgium as far as there is no group (under discussion in Wallonie)

Network origin





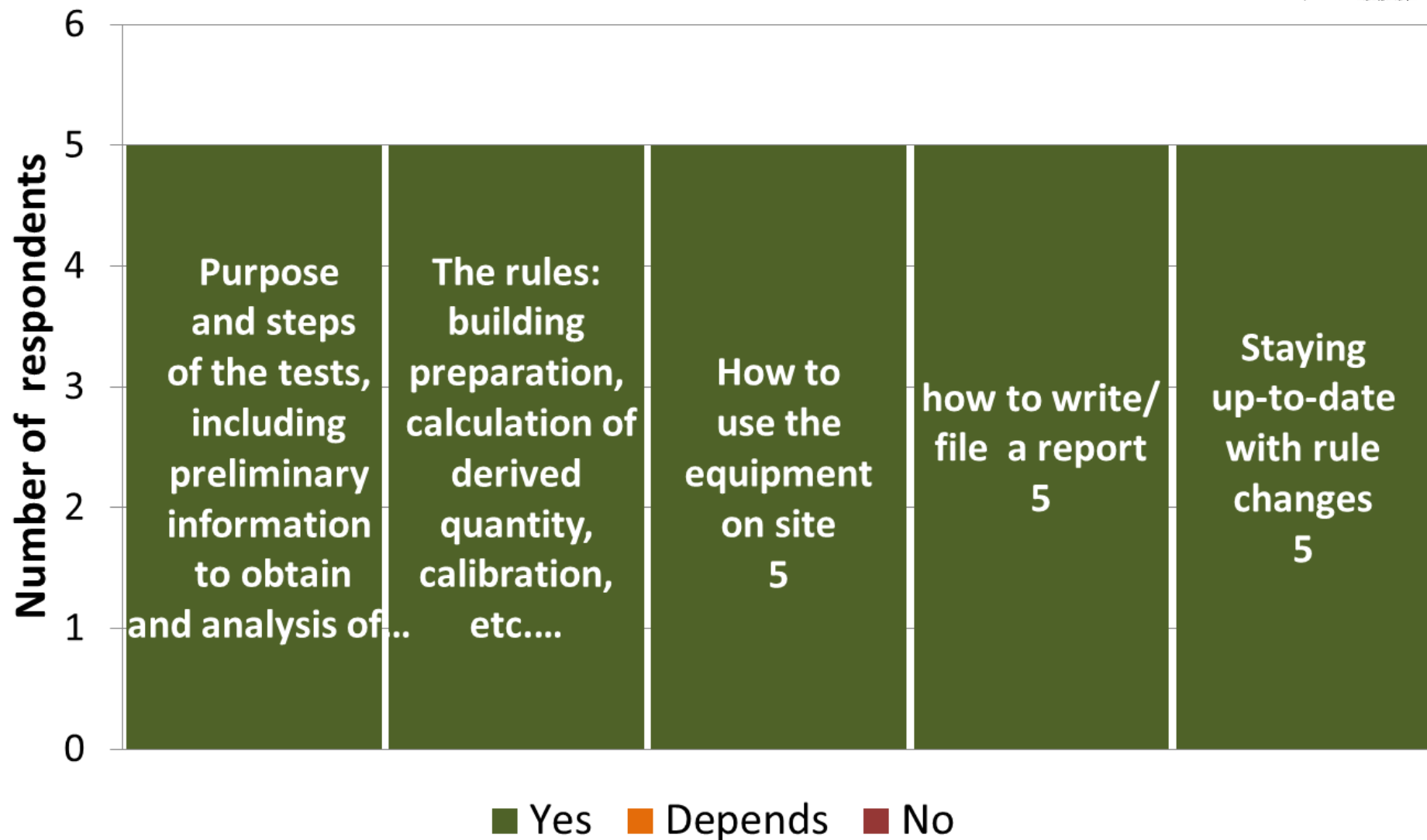
Network members



- 6 out of 7 respondents have at least one national network dealing with airtightness



Training programme always include...





Training programme sometimes include...

