DIN EN 17888-1:2024-11 (E)

Thermal performance of buildings - In situ testing of building test structures - Part 1: Data collection for aggregate heat loss test

Contents

Page

European foreword 4

Introduction 5

1 Scope 6

2 Normative references 6

3 Terms, definitions, symbols and units 7
3.1 Terms and definitions 7
3.2 Symbols and units 10

4 Principle 10

5 Requirements for the building test structure 10
5.1 Design requirements for building test structure 10
5.2 Location of the building test structure 11
5.3 Thermal qualification of the building test structure 11
5.4 Design requirements for installation of insulating systems within the building test structure 12
5.5 Non-tested zones (guarded zones) 12

6 Apparatus and associated calibration requirements 13
6.1 Internal apparatus 14
6.1.1 Temperature sensors 14
6.1.2 Relative humidity sensors 14
6.1.3 Electric resistance fan heaters 14
6.1.4 Electric circulation fans 14
6.1.5 Temperature controllers 14
6.1.6 Energy meters 14
6.1.7 Data logger 14
6.1.8 Extension leads 14
6.2 External apparatus 15
6.2.1 Weather station including Pyranometer 15
6.2.2 Data logger 15
6.3 Sampling intervals 15

7 Preparation of the building test structure and installation and location of apparatus 16
7.1 General 16
7.2 Location and number of apparatus 16
7.2.1 General 16
7.2.2 Internal air temperature and relative humidity sensors 16
7.2.3 Electric resistance fan heaters 17
7.2.4 Electric air circulation fans 17
7.2.5 Temperature controller 17
7.2.6 Energy meters 17
7.2.7 Data logger 18
7.2.8 Weather station and pyranometer 18
7.3 Measurements of the air tightness and/or air infiltration rate 18
7.4 Establishing and maintaining set point internal conditions 18

8 Test procedure 19
8.1 General test conditions for the building test structure 19
8.2 Pressurization test 20
8.3 Heating 20
8.4 Test duration 21
8.5 Post-test pressurization test 21

9 Data collection 21
9.1 Recording data 21
9.2 Downloading data 21
9.3 Data verification 22

10 Test report 22
10.1 General 22
10.2 Description of test 22
10.3 Control and validation 23
10.4 Results 23
10.5 Appendices 23

Annex A (informative) Principle of design of multi-zones building test structure 24

Annex B (informative) Examples of building test structures used in Europe for in situ testing 27

Annex C (informative) Example of layout of apparatus in a building test structure 30

Bibliography 31