Brief explanation and suggestions on Demo XLS 52016-1

Dick van Dijk
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Replaces: Readme_Demo_XLS_52016-1_2019.11.20.pdf

Questions and comments *on this new test version are welcome: dick.vandijk@epb.center*

1 The set of downloadable files

Version: the test version 2,9, dated 2023-01-19

Location: https://epb.center/support/documents/demo-en-iso-52016-1/

Content:

- 3 x **Calculation** Excel files (xlsm): office space, single family house, BESTEST case combined with specific climatic data set
- 3 x Demo **input data** files (xlsx): office space, single family house, BESTEST case
- 4 x Demo **climate data** files (xlsx): Oslo, Strasbourg, Athens, DRYCOLD (for BESTEST)
- This file (pdf): **Brief explanation and suggestions**

Separate:

- (1 x **Use Profile Generator** (see https://epb.center/support/documents/demo-en-16798-1/) with sheet added for single family house with temperature night time setback) *Separate download due to large file size*

2 Explanation on the spreadsheets

- The Info and Explanation sheets in each Excel file
- The website page on the case study to explain and demonstrate this standard
- Spreadsheet tool on solar shading by external obstacles (acc. to (EN) ISO 52016-1, Annex F)
- The website page on the case study to explain and demonstrate the spreadsheet tool on solar shading by external obstacles
- The information on the standard with climatic data (including link to spreadsheets and case study)

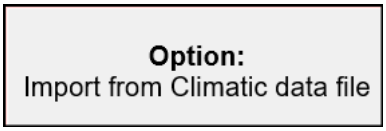
3 Procedure to prepare and execute calculation

1. Open the calculation Excel file

2. If you want another climate or the same climate with different planes (orientation and tilt angle):
   a. Go to the calculation Excel file and open the sheet Method_input

   b. Take or create an appropriate output file from the spreadsheet on ISO 52010-1. Be sure to save this file in the same folder as the calculation Excel file.

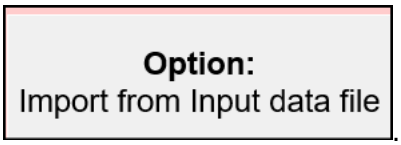
   c. Fill in the name of the Excel file that contains the climatic data

   d. Push the button: 

3. If you want another case, another space(type) or the same space(type) with different properties:
   a. Take and, if needed, adapt the Excel file that contains the input data. Be sure to save this file in the same folder as the calculation Excel file.
   Note that the input data cover more than one sheet!!

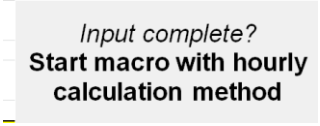
   b. Go to the calculation Excel file and open the sheet Method_input

   c. Fill in the name of the Excel file that contains the input data.

   d. Push the button: 

. The input data will automatically be copy-pasted to the various sheets of the calculation tool, if the version of input data file matches the required version (see sheet Method_input). The calculation Excel file will be stored with the identifier of the case and date and time in the file name.

4. Alternative for step 3 (only recommended for minor changes): manually adapt the input data on all input sheets of the calculation Excel file.

5. Don't forget to push the button: 

, This will start the macro to complete the hourly calculations (the monthly calculations are performed without macro).

6. When the calculation has been completed, don't forget to store the file, under the same name or a new name. It is recommended to adapt the file name to identify e.g. specific details of the case and the climate used.

4 Suggestions for simple variations

What	How, directly in the calculation spreadsheet	How, indirectly in the spreadsheet with input data	Comments
Change climatic data	**Sheet Method_input:** Cell D25: name of file with climatic data according to the output format of the spreadsheet on EN ISO 52010-1	Not applicable: the choice of climate is independent of choice of case	See also chapter 3
Use adaptive comfort criteria according to EN 16798-1	**Sheet Method_input:** Cell D106: 0 → 1	**Sheet Method_input:** Cell D20: 0 → 1	
Use adaptive transparent building elements with reference control strategy according to draft FprEN/FDIS 52016-3	**Sheet Method_input:** Cell D232: 0 → 1 And **Sheet Input_0:** For any window element: in row 31 replace "F" by "Wadapt1" **Sheet adaptW:** Choose/change the parameters that can be chosen as input data for the adaptive element, space type and control type	**Sheet Method_input:** Cell D55: 0 → 1 And **Sheet Input_0:** For any window element: in row 31 replace "F" by "Wadapt1" **Sheet adaptW:** Choose/change the parameters that can be chosen as input data for the adaptive element, space type and control type	Note that more than one window (if present) can be chosen to follow the same control strategy. But the controls will operate according to the orientation and tilt angle of the first window in sheet Input_0. **Monthly calculation method:** Note also that if another adaptive transparent building element (window) is chosen, the U-value and g-value in the sheet Input_0 need to be adapted manually, because the U- and g-value given in the sheet Input_0 are used for the monthly method as time-average values for the full year.
Ventilative cooling	**Sheet Method_input:**	**Sheet Method_input:**	Simple algorithm for demonstration and

	Cell D234: 0 → 1 And **Sheet DynamVent:** Choose/change the parameters that can be chosen as input data for ventilative cooling	Cell D57: 0 → 1 (**Sheet DynamVent** is not part of the Input data file; so see calculation sheet for parameter variations)	testing of the ventilative cooling potential. Often combined with adaptive comfort criteria, see above. **Monthly calculation method:** Note also that if the ventilative cooling option is chosen, it affects only the **hourly** calculation method. To approximate the effect of ventilative cooling for the monthly calculation method, please consider to adjust in the sheet Method_input the value for cell D117 resp. D39
No heating and/or no cooling power	**Sheet Method_input:** Cell D109 and/or cell D110: set to zero	**Sheet Method_input:** Cell D21 and/or cell D22: set to zero	For free float calculation: shows impact on thermal comfort

5 More information

For more information on this EPB standard and on the whole set of EPB standards, please visit the EPB Center website: www.epb.center

Specifically:

- Related spreadsheets
- Case study reports
- Webinar recordings
- Short videos
- FAQ (work in progress)