HRN EN ISO 52010-1:2017

Energy performance of buildings — External climatic conditions — Part 1: Conversion of climatic data for energy calculations

Subject: **National Datasheet conforming to the template in Annex A**

Version: 2019-12-20

HRN EN ISO 52010-1/ National Datasheet
(informative)

Input and method selection data sheet — Choices for Croatia

NA.1 General

This National Datasheet gives the choices to be used with respect to values, methods and references in Croatia when using the national methodology for assessment of energy performance of buildings for the purpose of issuing energy performance certificate, building permit and permit to use and for energy audit.

This National Datasheet is in line with the template in Annex A of the standard HRN EN ISO 52010-1:2017.

This National Datasheet takes into account national regulations, climatic conditions, traditions and a specific range of validity.

The specific national or regional regulations referred to in this document are:

- Technical regulation on energy economy and heat retention in buildings (Official Gazette 128/15, 70/18, 73/18, 86/18);
- Ordinance on energy audits and energy certification of buildings (Official Gazette 88/17);
- Methodology on energy audit (2017);
- Algorithms for assessment of energy performance of buildings (2017);
- Type solutions of application of alternative systems (2015);
- Handbook for energy certification of buildings (2010).
- Study: Preparation of climate data base for energy performance assessment of buildings, Croatian Meteorological and Hydrological Service DHMZ, Zagreb (2013)

NA.2 References

The references, identified by the EPB module code number, are given in a table complying with the format given in Table A.1 (a template).

Table NA.1 — References

Reference	Reference document	
	Number	Title
Mx-y[a]	…	…
	…	…

[a] In this document there are no choices in references to other EPB standards. The Table is kept to maintain uniformity between all EPB standards.

NA.3 Climatic input data

Table NA.2 — Weather station and climatic data set (See 6.3.2)

Name	Value					
Identifier for climatic data set	~~DRYCOLD.TMY~~					
Station and/or name of data set	~~Denver, Colorado, USA~~ ~~File: DRYCOLD.TMY~~					
	Symbol	**Unit**	**Value**	**Validity interval**[a]	**Origin**	**Varying**[b]
Latitude	φ_w	°	~~39,76~~	−90 to +90	station	No
longitude [c]	λ_w		~~−104,86~~	−180 to +180	station	No
time zone	TZ	h	~~−7~~	−12 to +12	station	No
First day of time series (day of the year)	$n_{day;start}$	-	1	1 to 366	station	No
Last day of time series (day of the year)	$n_{day;end}$	-	365	1 to 366	station	No
Day of the week for January 1		-	~~Monday (day 1)~~	~~Monday to Sunday (day 1 to 7)~~	~~station~~	~~No~~
Daylight saving time? [c]						
Leap day included	No					
Specific other information	~~Time at this station:~~ ~~Winter: MST = UTC − 7~~ ~~Summer: MDT = UTC − 6~~					
Name	**Value**					
Reference to documentation on application range and type of data	~~ANSI/ASHRAE standard 140~~[10] HRN EN ISO 15927-1 Annex A HRN EN ISO 15927-4 HRN EN ISO 15927-5					

a Practical range, informative.

b "Varying": value may vary over time: different values per time interval, for instance: hourly values or monthly values (not constant values over the year).

c If Yes: additional information to be added.

The measured hourly values (8760 h) are available only from two weather stations: Zagreb Maksimir and Split Marjan representing continental and coastal climate. Daily data are available for all weather stations and are reported as monthly data. A special procedure was developed to calculate hourly data for 12 characteristic days in a year, for all weather stations, based on monthly data of particular station and measured hourly data profiles from Zagreb Maksimir and Split Marjan weather stations.

NA.4 Calculation method

Table NA.3 — Method to assess direct (beam) irradiance if not available from weather station (See 6.4.2)

Method		Choice Yes/No[a]
1	Default method	~~YES~~ NO
2	Other method	~~NO~~YES
In case of method 2:		
	Reference to procedure:	HRN EN ISO 15927-1 Annex A; Study: Preparation of climate data base for energy performance assessment of buildings, Croatian Meteorological and Hydrological Service DHMZ, Zagreb (2013)
[a] Only one choice possible.		
The referenced procedure asses direct (beam) irradiance referred to horizontal from the difference of global and beam radiation without converting measured data to the surface normal to radiation direction, as done by Eq.(25) of HRN EN ISO 52010-1:2017. Direct irradiance on the inclined surface is obtained by using factor R_b instead of the approach by Eq. (26) of HRN EN ISO 52010-1:2017.		

Table NA.4 — Solar reflectivity of the ground ($\rho_{sol;grnd}$) (See 6.4.3)

Name	Value[a]
Fixed value	~~YES~~ NO
Dependent on ground condition, listed in climatic data file	~~NO~~ YES
Dependent on local ground condition (near the inclined surface)	~~NO~~ YES
Values available in climatic data file	NO
[a] Only one choice possible.	
Monthly values available for Zagreb Maksimir and Split Marjan weather stations, source: EUMETSAT (CM SAF SAL polar satellite)	

If fixed value:

Table B.5 — Solar reflectivity of the ground; if fixed value

Name	Value
Solar reflectivity of the ground, $\rho_{sol;grnd}$ [-]	0,2
NOT APPLICABLE	

If dependent on ground condition:

Not applicable and therefore no Table B.6 given.

Table B.7 — Choice between options and methods for calculation of shading by external objects (See 6.4.5.1)

~~Application[b]~~	~~All applications~~	
~~Description~~	~~Choice~~	
~~Effect of shading calculated in this document?~~	~~No~~	
~~If Yes:~~	~~Choice[a]~~	
~~Only method 1, Simplified method (shading of direct radiation)~~	~~Yes~~	
~~Only method 2, Detailed method (shading of direct and diffuse radiation)~~	~~No~~	
~~Both methods are allowed~~	~~No~~	
~~[a] Only one Yes per column possible.~~ ~~[b] Add more columns if needed to differentiate between applications (e.g. building categories, new or existing buildings, etc.).~~		
NOT APPLICABLE		

Table B.8 — Number of skyline segments, $n_{sh;segm}$ for input solar shading objects (See 6.4.5.2)

~~Application[b]~~	~~All applications~~	~~....~~
~~Description~~	~~Value of $n_{sh;segm}$[a]~~	~~Value of $n_{sh;segm}$[a]~~
~~Maximum number of segments over 360 degrees~~	~~15~~	
~~Fixed width (= 360 / $n_{sh;segm}$)[c]~~	~~No~~	
~~[a] Practical range, informative.~~ ~~[b] Add more columns if needed to differentiate between applications (e.g. building categories, new or existing buildings, etc.).~~ ~~[c] If not fixed, the width of each segment can be adapted to the width of the shading object, with limitation of maximum number of segments $n_{sh;segm}$.~~		
NOT APPLICABLE		

Table B.9 — Choice between methods for calculation of illuminance (See 6.4.6)

~~Application[a]~~	~~All applications~~	~~....~~
~~Description~~	~~Choice~~	~~Choice~~
~~Method 1, Default method, or Method 2, Alternative method~~	~~Method 1~~	
~~If choice is method 2:~~	~~Description~~	~~Description~~
~~Describe method 2~~	~~Not applicable~~	

~~a Add more columns if needed to differentiate between applications (e.g. building categories, new or existing buildings, etc.).~~
NOT APPLICABLE