

## EXISTING BUILDINGS

### ANNEX II

#### Integrated indoor well-being

**Assessment and verification:** The applicant shall provide documentation according to the EN 15251 standard as follow:

<b><i>THERMAL ENVIRONMENT</i></b>	
<i>Mechanical heated and cooled buildings</i>	<i>Buildings without mechanical cooling systems</i>
Category III of Table A.1 Indicator: PMV and/or PPD	Category III of Figure A.1 Indicator: Operative temperature $\Theta_0$
Category III of Table A.2 Indicator: Operative temperature	

<b><i>HUMIDIFICATION AND DEHUMIDIFICATION</i></b>
Category III of Table B.6 Indicator: relative humidity

Measurements points and instruments must refer to EN ISO 7726 (EN 12599).

<b><i>INDOOR AIR QUALITY AND VENTILATION RATES</i></b>		
<i>Non-residential buildings</i>	<i>Residential buildings</i>	
Category III of Table B.2 Indicator: total ventilation rate $q_{tot}$	Category III of Table B.5 Indicators: • air change rate for $m^2$ floor area • air change rate for hour	§B.4
Category III of Table B.3 Indicators: • ventilation rate for person • ventilation rate for $m^2$ floor area		
Category III of Table B.4 Indicator: outdoor $CO_2$ concentration		

Measurements can be taken referring to ASHRAE 62 standard.

The measurement instrumentation for the evaluation of the air supply must refer to EN 12599.

<b><i>LIGHTING</i></b>
Values of Table D.1 Indicators: • Maintained luminance at working areas • UGR • Ra

The measurements procedure refers to Clause 6 of EN 12464-1:2002.

Measurements of the horizontal maintained luminance should be carried in compliance with EN1302.

<i><b>NOISE</b></i>
Values of Table E.1 Indicator: sound pressure level

For Existing Buildings test method refers to measures taken on the average rooms of the building. The average room is here defined as a room of each different zone of the building characterized by a typical usage profile by occupants and subjected to outdoor climate conditions representative of the site.

## **References**

- EN 15251, Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics.
- ISO 7726, *Ergonomics of the thermal environment — Instruments for measuring physical quantities*.
- EN 12599; Ventilation for buildings – Test procedures and measuring methods for handling over installed ventilation and air conditioning systems.
- EN 12464-1; Light and lighting – Lighting of work places – Part 1: Indoor work places.
- EN 13032-2; Light and lighting – Measurements and presentation of photometric data of lamps and luminaries. Presentation of data for indoor and outdoor work places.
- ASHRAE Standard 62 – Ventilation for acceptable indoor air quality. Analysis and recommendations.