| Region: | Liguria | Archetype code: |
|---|---|---|
| Building category: | Residential buildings – Apartments in multi-family block | RES_APPBLOCK_ 1961-1970_D_LIG |
| Period of construction: | 1961-1970 | |
| Climatic zone: | D | Number of records: 16300 | |

**Description:**

External walls: no data available

Roof slabs: no data available

**Data sources:**
EPC databases (100%)

| | Data | Symbol | Unit of measure | Mean value | Standard deviation | Q1 (first quartile) | Q2 (Median value) | Q3 (third quartile) |
|---|---|---|---|---|---|---|---|---|
| **BUILDING GEOMETRY** | Number of floors | $n_f$ | - | - | - | - | - | - |
| | Gross height | $H_g$ | m | - | - | - | - | - |
| | Footprint area | $A_{footprint}$ | m² | - | - | - | - | - |
| | Heated gross floor area | $A_{H;g}$ | m² | - | - | - | - | - |
| | Heated net floor area | $A_{H;n}$ | m² | - | - | - | - | - |
| | Heated gross volume | $V_{H;g}$ | m³ | - | - | - | - | - |
| | Heated net volume | $V_{H;n}$ | m³ | - | - | - | - | - |
| | Compactness ratio | $A_{env}/V_{H;g}$ | m⁻¹ | 0.48 | 0.21 | 0.31 | 0.42 | 0.64 |
| | WWR – North orientation | $WWR_N$ | - | - | - | - | - | - |
| | WWR – South orientation | $WWR_S$ | - | - | - | - | - | - |
| | WWR – East orientation | $WWR_E$ | - | - | - | - | - | - |
| | WWR – West orientation | $WWR_W$ | - | - | - | - | - | - |
| | Window to useful floor area ratio | $A_{wi}/A_{use}$ | - | 0.11 | 0.04 | 0.09 | 0.10 | 0.11 |
| **ENVELOPE** | Roof type | | | | - | | | |
| | U-value of the roof | $U_{fl;up}$ | W/(m²·K) | 1.41 | 0.60 | 1.20 | 1.58 | 1.74 |
| | External walls type | | | | - | | | |
| | U-value of the wall | $U_{wl}$ | W/(m²·K) | 1.17 | 0.36 | 1.06 | 1.15 | 1.31 |
| | Slab on ground floor type | | | | - | | | |
| | U-value of the floor | $U_{fl;lw}$ | W/(m²·K) | 1.58 | 0.45 | 1.43 | 1.61 | 1.71 |
| | Windows type | | | | - | | | |
| | U-value of the windows | $U_W$ | W/(m²·K) | 4.16 | 1.22 | 3.25 | 4.40 | 5.13 |
| | Shading system type | | | | - | | | |
| **GAINS and VENTILATION** | Occupancy density * | $O_C$ | person/m² | UNI EN 16798-1 - Table A.19 | | | | |
| | Lighting power density * | $W_L$ | W/m² | UNI EN 16798-1 - A.8.3 | | | | |
| | Equipment power density * | $W_A$ | W/m² | UNI EN 16798-1 - A.8.3 | | | | |
| | Type of ventilation | | | Natural: 100% | | | | |
| | Air exchange rate * | $n$ | h⁻¹ | 0.30 | 0.00 | 0.30 | 0.30 | 0.30 |
| **THERMAL SYSTEMS** | Heating system type | | | Unknown: 97%; Autonomous: 3% | | | | |
| | Heating generator | | | Traditional boiler: 42%; Unknown: 34%; Condensing boiler: 23%; Air-source heat pump: 1% | | | | |
| | Daily operating time of the heating system * | $t_H$ | h | 12 | 0 | 12 | 12 | 12 |
| | Energy carrier | | | Natural gas: 44%; Unknown: 34%; Electricity and natural gas: 20%; Electricity: 1%; Gas Oil: 1% | | | | |
| | Heating emission sub-system | | | Radiators: 62%; Unknown: 34%; Radiant panels: 2%; Air Ducts: 1%; Fan-coil: 1% | | | | |
| | Cooling system type | | | Unknown: 93%; Heat pump air-air: 7% | | | | |
| | Daily operating time of the cooling system * | $t_C$ | h | - | - | - | - | - |
| | Cooling emission sub-system | | | - | | | | |
| | DHW system type | | | - | | | | |
| | DHW generator | | | Unknown: 59%; Natural gas boiler: 13%; Condensing boiler: 13%; Electric boiler: 11%; Electric heat pump: 4% | | | | |

\* These values were not available in the considered sources, and are thus derived from UNI EN Standards

| Region: | Liguria | | Archetype code: |
|---|---|---|---|
| Building category: | Residential buildings – Apartments in multi-family block | | RES_APPBLOCK_ |
| Period of construction: | 1961-1970 | | 1961-1970_D_LIG |
| Climatic zone: | D | Number of records: 16300 | |

## Numerical variables – GEOMETRY

### COMPACTNESS RATIO



### WINDOWS TO WALL RATIO



☐ WWR_N ☐ WWR_S ☐ WWR_E ☐ WWR_W ☐ Awi/Ause
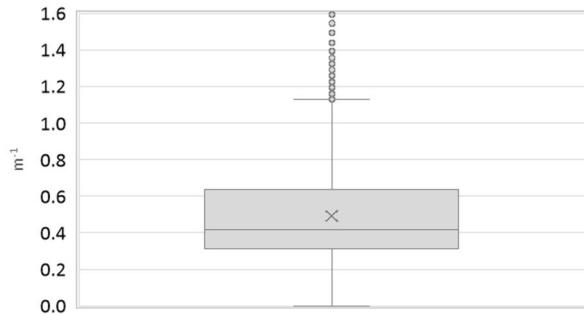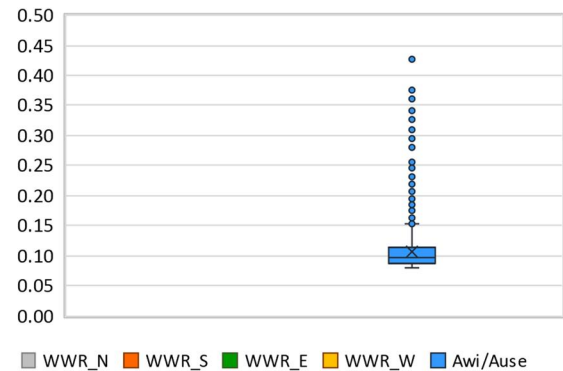
## Numerical variables – ENVELOPE

### OPAQUE BUILDING COMPONENTS U-VALUE



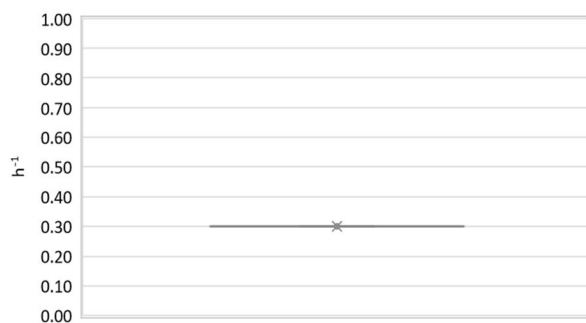☐ External walls ☐ Slab on ground floor ☐ Roof
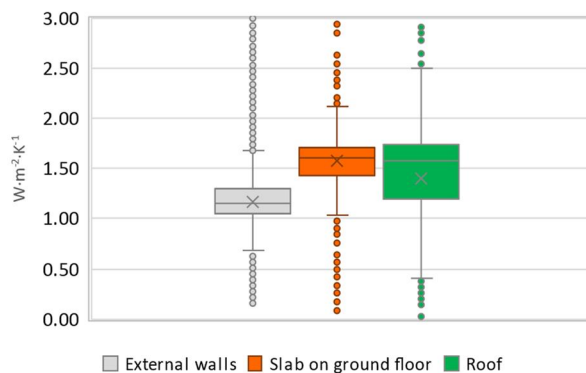
### WINDOWS U-VALUE
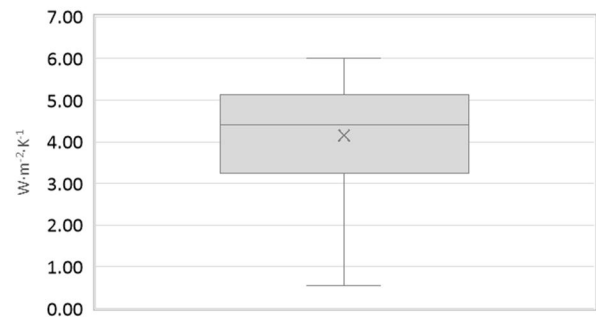


## Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE (Standard Values)

### AIR EXCHANGE RATE



### OCCUPANCY DENSITY


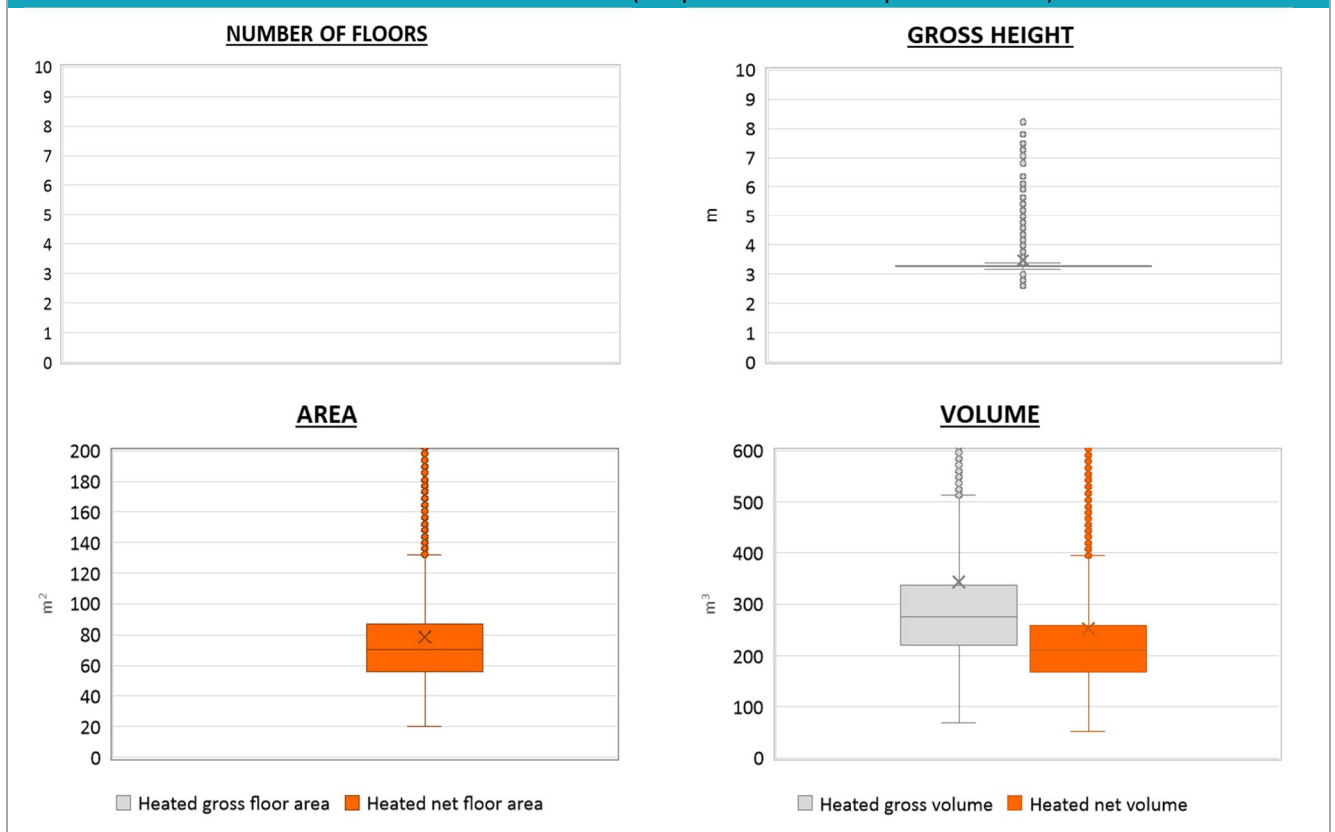
### INTERNAL GAINS POWER DENSITY



### DAILY OPERATING TIME



☐ Heating ☐ Cooling

*Residential buildings – Apartment blocks – 1961-1970 – Zone D – Italy*

| Region: | Liguria | | Archetype code: |
|---|---|---|---|
| Building category: | Residential buildings – Apartments in multi-family block | | RES_APPBLOCK_ 1961-1970_D_LIG |
| Period of construction: | 1961-1970 | | |
| Climatic zone: | D | Number of records: 16300 | |

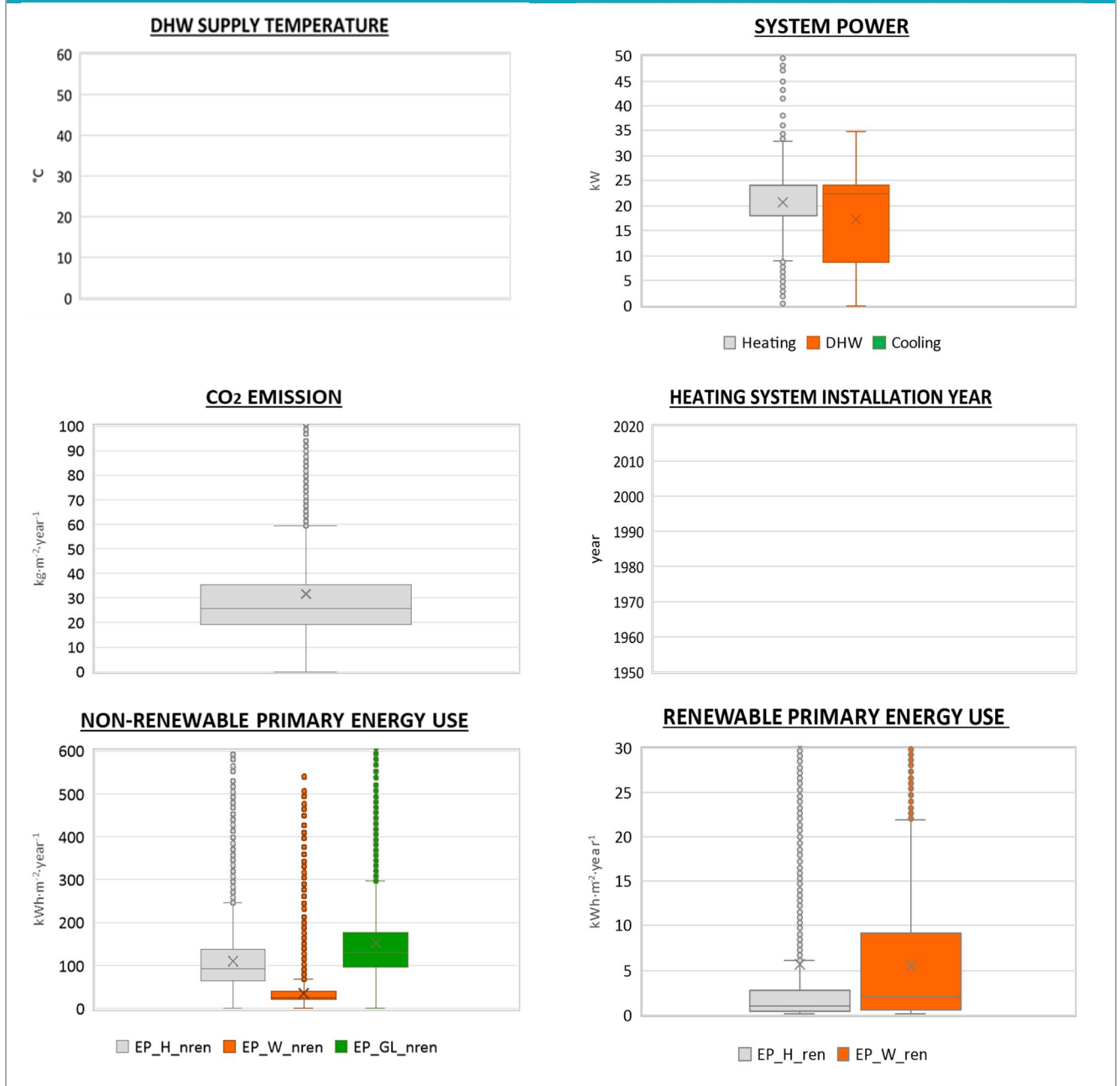| ADDITIONAL DATA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Data | Symbol | Unit of measure | Mean value | Standard deviation | Q1 (first quartile) | Median value | Q3 (third quartile) |
| **GEOMETRY: apartments** | Inter-storey height | $H_n$ | m | 3.3 | 0.2 | 3.2 | 3.3 | 3.3 |
| | Heated gross floor area | $A_{H;g}$ | m$^2$ | - | - | - | - | - |
| | Heated net floor area | $A_{H;n}$ | m$^2$ | 78.5 | 94.8 | 56.3 | 70.7 | 86.6 |
| | Heated gross volume | $V_{H;g}$ | m$^3$ | 343.3 | 3049.4 | 219.9 | 274.2 | 337.1 |
| | Heated net volume | $V_{H;n}$ | m$^3$ | 252.4 | 497.8 | 167.8 | 210.9 | 259.0 |
| **THERMAL SYSTEMS** | Heating efficiency or *COP* | $\eta_{H;gen}$ or $COP_{H;gen}$ | - | This value has to be retrieved from suitable datasheets | | | | |
| | Total heating power * | $P_{H;gen}$ | kW | 20.6 | 7.4 | 18.0 | 24.0 | 24.0 |
| | Cooling efficiency or *EER* | $\eta_{C;gen}$ or $EER_{C;gen}$ | - | This value has to be retrieved from suitable datasheets | | | | |
| | Total cooling power * | $P_{C;gen}$ | kW | - | - | - | - | - |
| | Temperature of DHW | $\theta_W$ | °C | - | - | - | - | - |
| | DHW system power * | $P_{W;gen}$ | kW | 17.4 | 9.7 | 8.8 | 22.5 | 24.0 |
| | * These values refer to the apartment scale | | | | | | | |

## Additional data: GEOMETRY (the plots refer to the apartment scale)

### NUMBER OF FLOORS

### GROSS HEIGHT

### AREA

### VOLUME



☐ Heated gross floor area  ■ Heated net floor area

☐ Heated gross volume  ■ Heated net volume

| Region: | Liguria | | Archetype code: |
|---|---|---|---|
| Building category: | Residential buildings – Apartments in multi-family block | | RES_APPBLOCK_ |
| Period of construction: | 1961-1970 | | 1961-1970_D_LIG |
| Climatic zone: | D | Number of records: | 16300 |

## Additional data: other numerical variables that are not included in the archetype

### DHW SUPPLY TEMPERATURE



### SYSTEM POWER



Legend: Heating, DHW, Cooling

### CO₂ EMISSION



### HEATING SYSTEM INSTALLATION YEAR



### NON-RENEWABLE PRIMARY ENERGY USE



Legend: EP_H_nren, EP_W_nren, EP_GL_nren

### RENEWABLE PRIMARY ENERGY USE



Legend: EP_H_ren, EP_W_ren

NOTE: Sample size of the analysed data.

Compactness ratio: 16294; Window to useful floor area ratio: 2019 ; U-value of the roof: 2288; U-value of the wall: 14054; U-value of the floor: 830; U-value of the windows: 16300; Inter-storey height: 16300; Heated net floor area: 16300; Heated gross volume: 16300; Heated net volume: 16300; Total heating power: 3927; DHW system power: 9781; CO2 Emission: 16098; EP_H_nren: 16252; EP_W_nren: 15862; EP_GL_nren: 16213; EP_H_ren: 13340; EP_W_ren: 9693