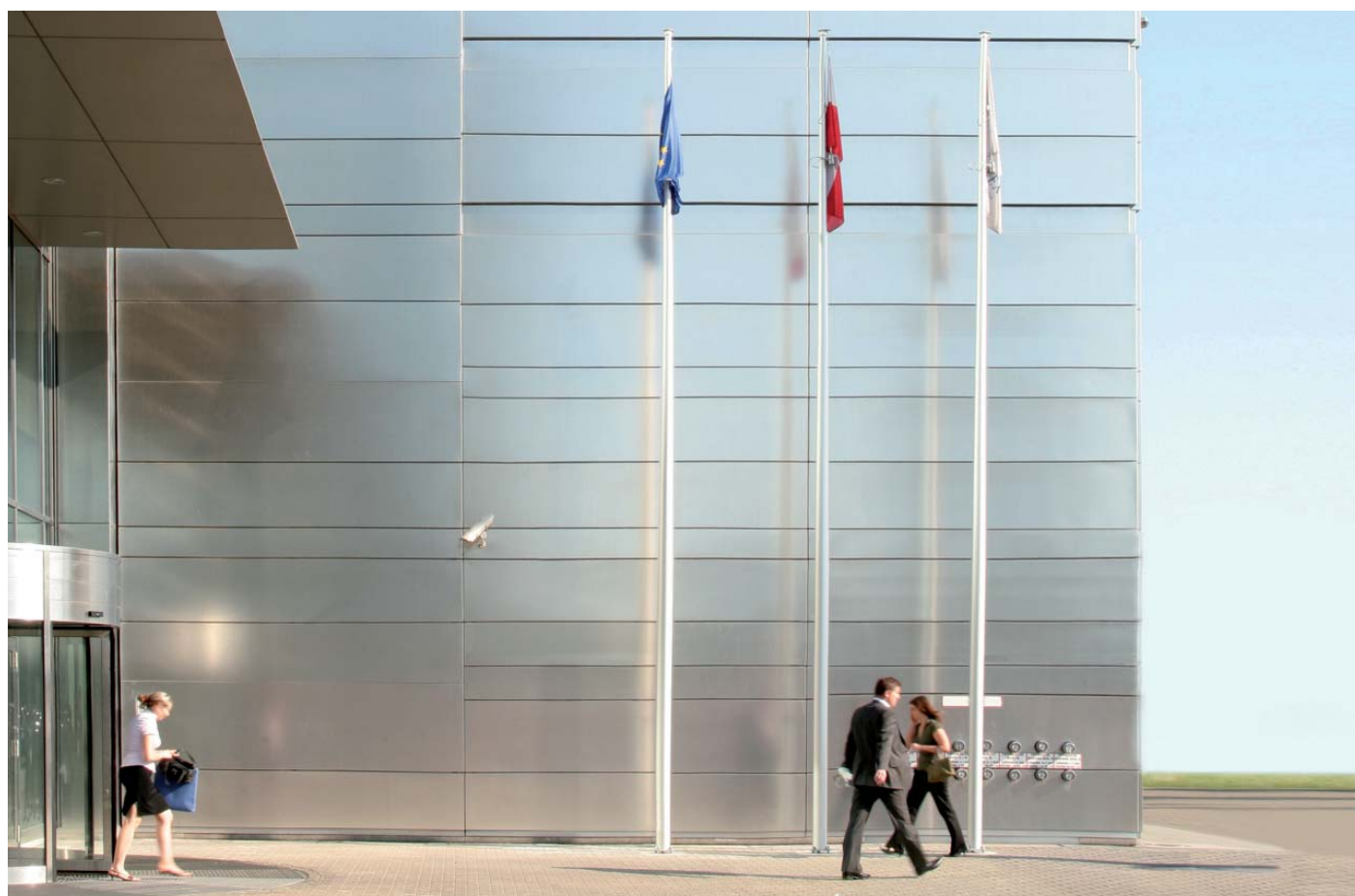


The European Standard EN 15232

A key contribution to worldwide energy efficiency

Around the world new legislation is promoting the use of energy efficient technologies. The European Standard EN 15232 (“Energy performance of buildings – Impact of Building Automation, Controls and Building Management”) was compiled in conjunction with the Europe-wide implementation of the directive for energy efficiency in buildings (Energy Performance of Buildings Directive EPBD) 2002/91/EG. The standard describes methods for evaluating the influence of building automation and technical building management on the energy consumption of buildings.

Four efficiency classes A to D have been introduced to this purpose. After a building has been equipped with building automation and control systems, it will be assigned one of these classes. The potential savings for thermal and electrical energy can be calculated for each class based on the building type and building purpose. The values of the energy class C are used as the reference for comparing the efficiency.



The following diagram shows the differences in energy consumption for three building types in the energy efficiency classes A, B and D relative to the basis values in rating C. For example, by using class A, 30 % of the thermal energy can be saved in offices.

Building Automation and Control (BAC) efficiency classes to EN 15232	Efficiency factor for thermal energy			Efficiency factor for electrical energy		
	Office	School	Hotel	Office	School	Hotel
A High energy performance building automation and control system (BACS) and technical building management (TBM)	0.70	0.80	0.68	0.87	0.86	0.90
B Advanced BACS and TBM	0.80	0.88	0.85	0.93	0.93	0.95
C Standard BACS	1	1	1	1	1	1
D Non energy efficient BACS	1.51	1.20	1.31	1.10	1.07	1.07

Function list and assignment to energy performance classes (section from table 1 of the EN 15232:2007 [D])

	Heating / Cooling control	Ventilation / Air conditioning control	Lighting	Sun protection
A	<ul style="list-style-type: none"> – Individual room control with communication between controllers – Indoor temperature control of distribution network water temperature – Total interlock between heating and cooling control 	<ul style="list-style-type: none"> – Demand or presence dependent air flow control at room level – Variable set point with load dependant compensation of supply temperature control – Room or exhaust or supply air humidity control 	<ul style="list-style-type: none"> – Automatic daylight control – Automatic occupancy detection manual on / auto off – Automatic occupancy detection manual on / dimmed – Automatic occupancy detection auto on / auto off – Automatic occupancy detection auto on / dimmed 	<ul style="list-style-type: none"> – Combined light/blind/ HVAC control
B	<ul style="list-style-type: none"> – Individual room control with communication between controllers – Indoor temperature control of distribution network water temperature – Partial interlock between heating and cooling control (dependent on HVAC system) 	<ul style="list-style-type: none"> – Time dependent air flow control at room level – Variable set point with outdoor temperature compensation of supply temperature control – Room or exhaust or supply air humidity control 	<ul style="list-style-type: none"> – Manual daylight control – Automatic occupancy detection manual on / auto off – Automatic occupancy detection manual on / dimmed – Automatic occupancy detection auto on / auto off – Automatic occupancy detection auto on / dimmed 	<ul style="list-style-type: none"> – Motorized operation with automatic blind control
C	<ul style="list-style-type: none"> – Individual room automatic control by thermostatic valves or electronic controller – Outside temperature compensated control of distribution network water temperature – Partial interlock between heating and cooling control (dependent on HVAC system) 	<ul style="list-style-type: none"> – Time dependent air flow control at room level – Constant set point of supply temperature control – Supply air humidity limitation 	<ul style="list-style-type: none"> – Manual daylight control – Manual on/off switch + additional sweeping extinction signal – Manual on/off switch 	<ul style="list-style-type: none"> – Motorized operation with manual blind control
D	<ul style="list-style-type: none"> – No automatic control – No control of distribution network water temperature – No interlock between heating and cooling control 	<ul style="list-style-type: none"> – No air flow control at room level – No supply temperature control – No air humidity control 	<ul style="list-style-type: none"> – Manual daylight control – Manual on/off switch + additional sweeping extinction signal – Manual on/off switch 	<ul style="list-style-type: none"> – Manual operation for blinds