

Spain's new Building Energy Standards place the Country among the Leaders in Solar Energy in Europe

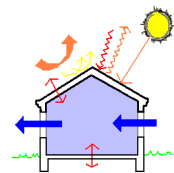
The recently approved package of minimum construction standards, Spain's Building Technical Code (CTE - Código Técnico de la Edificación), will require all new or renovated buildings to cover 30%-70% of the Domestic Hot Water demand with solar thermal energy.

Spain's new Building Technical Code establishes minimum requirements for energy efficient buildings

In March 2006, the Spanish Council of Ministers approved a new construction standard through Royal Decree 314/2006 of 17 March 2006. This updates the old one dating from the 1970s and partially transposes the EU Directive 2002/91/CE on Energetic Efficiency in Buildings. The new standard, called the **Building Technical Code (CTE - Código Técnico de la Edificación)**, establishes new quality, security, energy efficiency and habitability requirements for new or renovated buildings, thus creating a legislative framework that harmonises Spanish building standards with those of the European Union. This standard should also promote technological innovation and development.

In particular, the standard includes the following basic requirements for energy efficiency of buildings:

1- Limitation of the general energy demand of a building. Buildings will be designed taking into consideration insulation, air permeability, exposure to solar radiation, and the local climatologic conditions, and using the necessary materials and techniques to limit the gain and loss of energy.



2- Performance of the thermal facilities. The thermal facilities of a building (heating, ventilating, air-conditioning, etc...) will have a minimum energy efficiency target, established by current legislation.



3-Energy efficiency of the lighting facilities. The lighting facilities of buildings will be appropriate to meet the lighting requirements of users and at the same time will be energy-efficient. To this end, they will have a control system that will optimise the use of natural light and adapt their use depending on the occupancy of the area.



4-Minimum contribution from solar powered systems. A minimum percentage ranging from 30% up to 70% of the annual energy requirements for the production of Domestic Hot Water (DHW) demand will be met with solar thermal energy. The percentage will depend on geographical location and the specific demand of the building for domestic hot water.



5- Minimum contribution from photovoltaic systems to the total electric energy consumption. In certain buildings, photovoltaic systems will be introduced to transform solar energy into electric energy for personal or community use.



The energetic impact of the new Building Technical Code

The energy efficiency requirements established by the CTE, which affects residential as well as public buildings, will be mandatory from October 2006. Until then, there is a period of voluntary application. From October on, it is expected that the estimated 400,000 households to be built annually in the years to come will be equipped with such facilities. It will also be mandatory to install photovoltaic panels in shopping centres, industrial buildings, governmental buildings, hotels, and hospitals with a built surface area of more than 3,000 m².

The Spanish Institute for Energy Diversification and Saving (I.D.A.E.) has calculated that with the implementation of these new energy requirements introduced by the CTE, each building will reduce energy consumption by between 30% and 40%. Moreover, the CO₂ emissions associated with energy production and consumption will be reduced by 40% to 55%.

It has also been estimated that for each household (4 people, 100 m²) one or two m² of photovoltaic panels will be needed, which will involve an additional cost of 600 to 2,000 euros (approximately 1% of the total cost of the house). This initial cost will be paid off in 5-10 years. After that period, each family could save up to 80 euros per year.

The CTE supports Spain's goal of installing 5 million square meters of thermal panels and increase photovoltaic solar energy from 143 to 400 MW by 2010, established by the Renewable Energy Plan 2000-2010 (see Spanish ETAP roadmap, page 11). The companies that produce and commercialise solar energy systems and equipment would be among those to benefit the most as revenues will multiply and approximately 5000 jobs will be generated.

Spain is the first European country to make the implementation of solar thermal energy obligatory in new and refurbished buildings. The Spanish Technical Building Code could serve as a model for policy makers all over Europe.

The Ministry of Housing and the different professional unions of architects and engineers have started to offer intensive training courses and conferences in order to prepare and educate professionals on this matter.

Sources:

- Building Technical Code Website: www.codigotecnico.org/index?id=29
- Institute for Energy Diversification and Saving (I.D.A.E.) : <http://www.idae.es/index.asp?i=en>
- Spanish Technical Building Code (Royal Decree 314/2006 of 17 March 2006) and its Annexes were published in the Spanish Official Journal on 28 March 2006:
 - <http://www.boe.es/boe/dias/2006/03/28/pdfs/A11816-11831.pdf>
 - http://www.boe.es/boe/dias/2006/03/28/pdfs/SUP06_074C.pdf
- Spanish ETAP Roadmap: http://ec.europa.eu/environment/etap/pdfs/roadmaps/spain_en.pdf
- Press News:
 - <http://news.soliclima.com/modules.php?name=News&file=article&sid=810>
 - http://www.eraingenieria.com/portal/lang_es-ES/tabid_7124/default.aspx
 - <http://news.soliclima.com/modules.php?name=News&file=article&sid=585>

Barcelona, city of sun and sustainable energy

In this context, Barcelona already has a unique regulation in the area of solar energy: the "Solar Ordinance". This standard, which came into force in August 2000, decrees that all new buildings should use thermal solar energy for 60% of their sanitary hot water supplies. Furthermore, the municipality promotes photovoltaic energy for the generation of electricity through the conversion of sunshine. The monitoring and assessment of the development of the Solar Thermal Ordinance show that from when the ordinance came into force until December 2005, 428 projects were processed, with a total of 31,050 new square metres of solar heat capture surface area in the city due to the ordinance, producing an estimated energy saving of 24,840 MWh/year. Considering the fact that Barcelona previously had 1,650 square metres of solar thermal panels, the city has registered an increase of some 1.78% thanks to the ordinance. This kind of initiative is supported by different European Commission programmes, including the Campaign for an Energy Sustainable Europe 2005-2008.

More:

<http://www.sustenergy.org/tpl/page.cfm?pageName=home>
<http://www.barcelonaenergia.com/eng/operations/ost.htm>