

METABASE ITeC

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ABSTRACT

The Catalonia Institute of Construction Technology - ITeC is an independent, non-profit-making organisation that carries out its work in the area of operations intended to further the progress of construction.

Since 1985, it has owned both the generic Bedec DB and the Materials register DB that includes the reference prices, commercial products and legal specifications of constructive elements for edification, civil engineering, urbanisation, rehabilitation, preventive and corrective maintenance, security and health, tests of quality control, etc. It allows designers to consult, and helps them assemble project budgets and technical specifications. Since 2004, it has been expanded with environmental information (construction and packaging waste, energy costs and CO2 emissions).

In parallel, ITeC has contributed to creating and maintaining other DBs on construction in two directions: DBs of Enterprises, containing their commercial information (list of products with their characteristics, reference prices, certificates and images, prices of constructive elements that use the products, contact, branches, links to their web, etc.), and DBs of official and private Entities in Catalonia (Gisa, Incasol, Port de Barcelona, etc.).

Since 2001, all this information has been 100% available online in metaBaseITeC at www.itec.cat.

KEY WORDS

information technology, construction databases, project definition knowledge, prices of constructive elements, commercial products information, environmental information.

INTRODUCTION

Currently included in metaBaseITeC is a total of around 85 DBs with prices of constructive elements (and its related information), and around 317 with commercial products and their technical information.

The information contained in the different DBs, in catalan and spanish, is periodically updated. This gives users the benefit of consulting (or downloading and dragging & dropping) the new and latest information contained in all DBs.

Users can also register for a free mailing list known as InfoITeC where they receive the latest news on metaBaseITeC updates and other products of interest.

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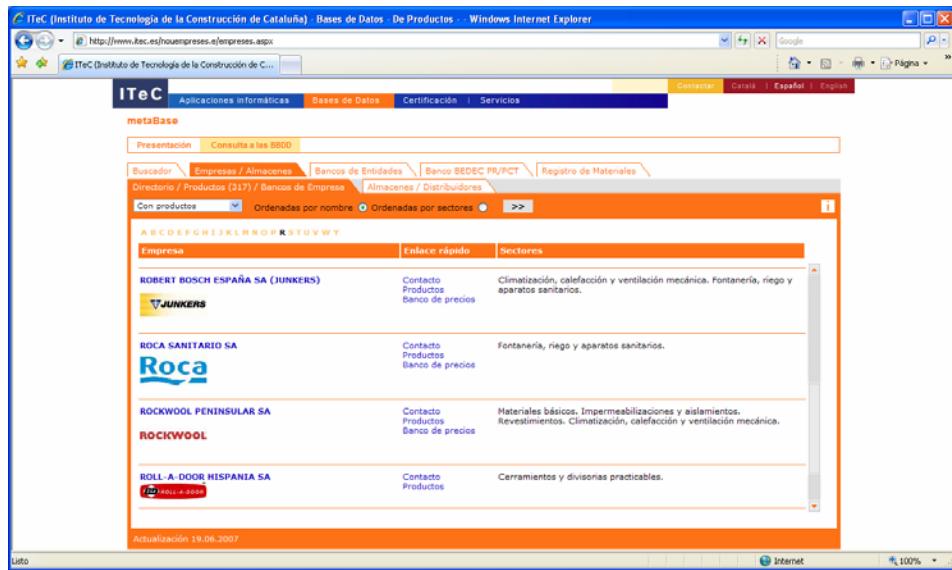


Figure 1. View of DBs of enterprises (= Empresas / Almacenes). Also there are DBs of entities (= Bancos de Entidades), Bedec DB (= Banco BEDEC PR/PCT) and Materials register DB (= Registro de Materiales).

THE BEDEC DB

The Bedec DB is a parametric DB that allows designers to find a constructive element quickly by selecting the values of the properties shown in every constructive element class. During the values selection, incompatible values of other properties are disconnected automatically. This means they do not have to select from among the hundreds of different possibilities of the constructive elements in any particular class.

Information on the Enterprises and Materials register DBs is also integrated with the different constructive elements of the Bedec DB. Because of this related information, it lets designers consult and parametrically select both generic and commercial products information.

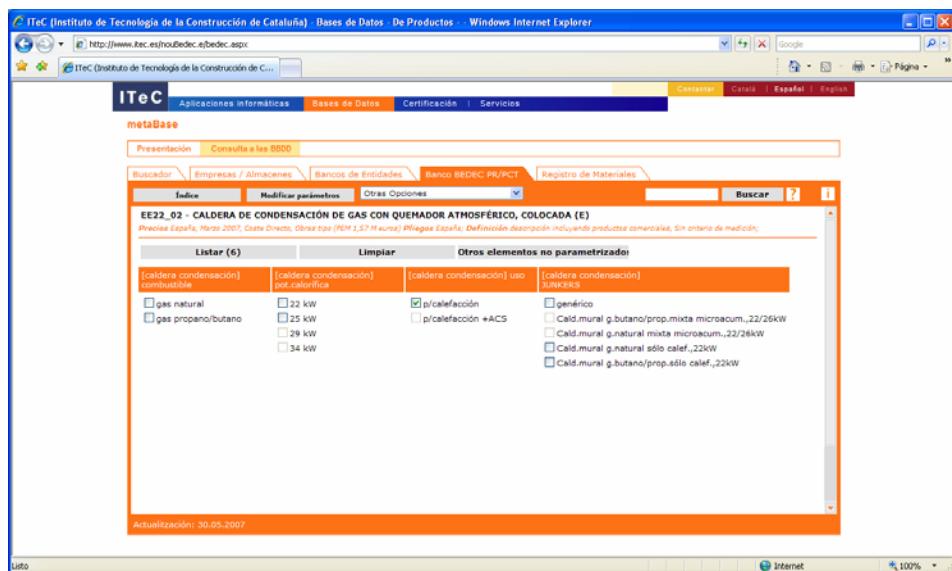


Figure 2. View of a parametric class. The values of the properties can be selected in any order, and this disconnects automatically the incompatible values of other properties.

EE22_02 - CALDERA DE CONDENSACION DE GAS CON QUEMADOR ATMOSFERICO, COLOCADA (E)

EE220N3MBXWS u Caldera de condensación de gas natural con quemador atmosférico, mural ref. ZSB7-22A de la serie CALDERAS MURALES A GAS de JUNKERS, de 22 kW de potencia calorífica, de plancha de acero para calefacción, de 3 bar de presión, con válvulas, vaso de expansión y conjunto de accesorios, colocada

Código	U.M.	Definición	Precio	Cantidad	€	Más Info
A012G000	h	Oficial la calefactor	16,64	8,0000	133,12000	
A013G000	h	Ayudante calefactor	15,02	8,0000	120,16000	
EE220N3MBXWS	u	Caldera mural a gas edificio calefacción de gas natural, con quemador atmosférico de 22 kW y unas dimensiones de 850x440x360 mm, para gas natural, ref. ZSB7-22A de la serie CALDERAS MURALES A GAS de JUNKERS	2.400,00	1,0000	2.400,00000	(MA,CAR,CER,ING,ON)
A%AUX001	%	Gastos auxiliares sobre la mano de obra	253,28000	0,0150	3,79920	

Actualización: 30.05.2007

Figure 3.

EE22_02 - CALDERA DE CONDENSACION DE GAS CON QUEMADOR ATMOSFERICO, COLOCADA (E)

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Consumo	Peso	Coste energético	Emisión CO2	
	Kg	MJ	kwh	Kg
Componentes constitutivos de materiales	45,00	4.058,48	1.127,36	408,15
acero esmaltado	19,35	750,78	208,55	73,73
acero inox.	8,60	1.522,20	422,83	138,06
cobre	8,60	1.290,00	358,33	126,42
fibra de vidrio	2,00	44,00	12,22	3,30
PVC	6,45	451,50	125,42	66,64
Total	45,00	4.058,48	1.127,36	408,15

Actualización: 30.05.2007

Figure 4.

Figures 3 and 4. Each constructive element has its cost justification in manpower, materials, machinery and auxiliary costs (as shown in figure 3), but also its related information of legal specifications, environmental information of construction and packaging waste, energy costs and CO₂ emissions (as shown in figure 4), commercial products (characteristics, certificates, images), etc.

The Bedec DB can also adjust the final results by selecting different filters. So, each constructive element can adjust for date and region of price, region of legal specifications, price depending on volume of the building; automatically insert the name and reference of commercial products into the definition, automatically insert measuring criteria into the definition, and finally, show price depending on contractual situation.

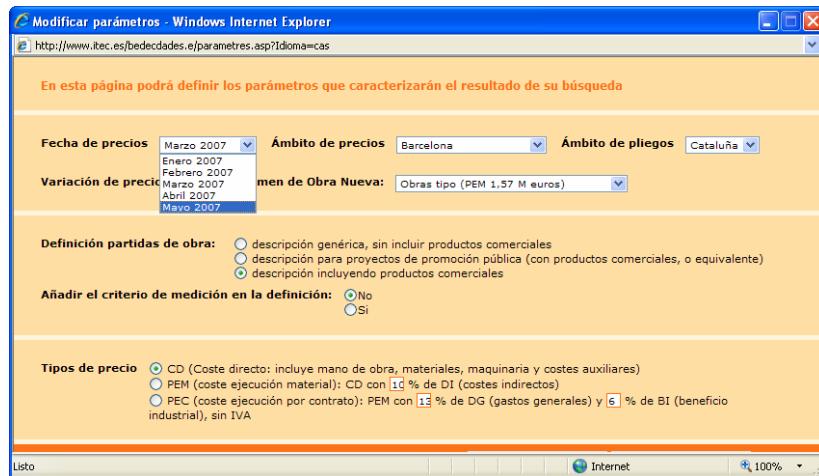


Figure 5. Filter selection.

SEARCH ENGINE (= BUSCADOR)

In metaBaseITeC users can directly consult any of the DBs it contains (enterprises, entities, Bedec or Materials register DBs), or use a search engine that searches all the DBs at once.

This dedicated search engine permits users to search for the name of an enterprise or entity, the name of a commercial product, the identifier of a constructive element, a code or any other word or group of words, giving as a result all locations where the different DBs provide a response. In addition, all the different DBs in metaBaseITeC have their own search engine that allow users to limit their search to a particular DB.

The search engine applies many search capabilities to ensure a positive result. These include synonyms (searches for the word and all its synonyms), equivalences (known words are substituted for others that give results), male/female, singular/plural possibilities, and measurement values.

If it doesn't obtain results, the words of the search are automatically included into a internal DB, to be treated if possible for synonyms, equivalences, etc. to obtain results in a subsequent search.

A search can obtain more than 500.000 results. Although the user can refine the search by giving more words, the results are always shown distributed in the blocs that correspond to the different DBs included in metaBaseITeC. Within each bloc, the results are also shown under the classification system of the constructive elements in each DB.

This lets users quickly obtain a concrete result by surfing in the different branches of the classification system instead of reading lists of results (i.e. if the user requires 'concrete' and the results in an enterprise DB show the classifications 'foundations' and 'structure' (amongst others), the user can quickly continue through the branch 'structure', for example selecting the next sub-branch 'pillar' etc., and so on).

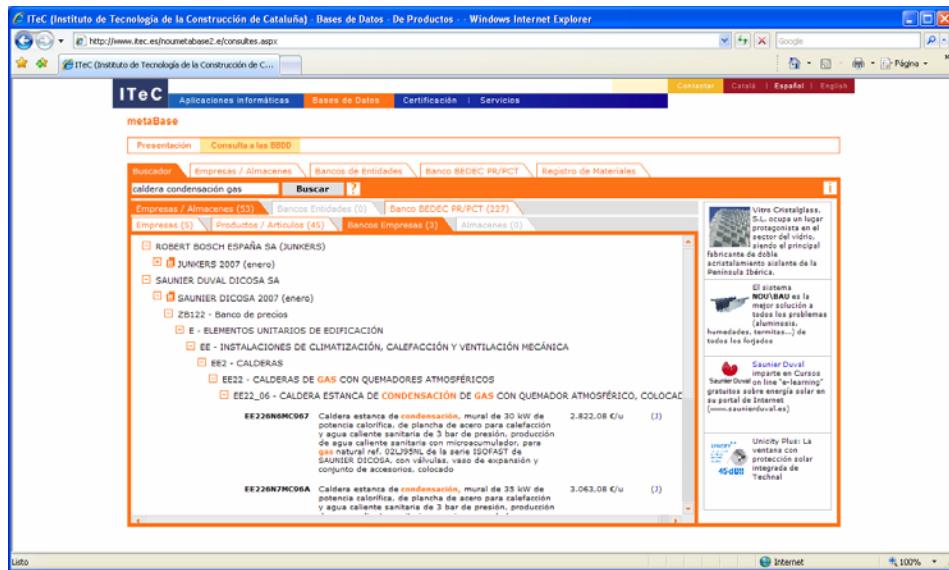


Figure 6. View of a result of a search in DBs of enterprises (=Bancos empresas). Also there are results in DBs of entities (=Bancos entidades) and in Bedec DB (Banco Bedec).

FORMATS OF INFORMATION

The information can be exported in different formats (.bc3, .pdf, .jpg, .xls, etc). Some are free (information from the Enterprises DBs) while others need a licence (the Entities, Bedec and Materials register DBs) obtained when acquiring and installing ITeC's Bedec CD-Rom.

One format that is particularly interesting for designer users is the FIEBDC format (extension .bc3). This is the Spanish Construction DB Standard Exchange Format between DB and programs, which is regulated by FIEBDC association. The information the format can contain includes anything relating to the prices of constructive elements, legal specifications, commercial products and their characteristics, images and certificates, information relating to the enterprises, etc. This permits a DB provided in this format to be used by any of the existing budget programs that accepts the format (more than 20 programs in Spain).

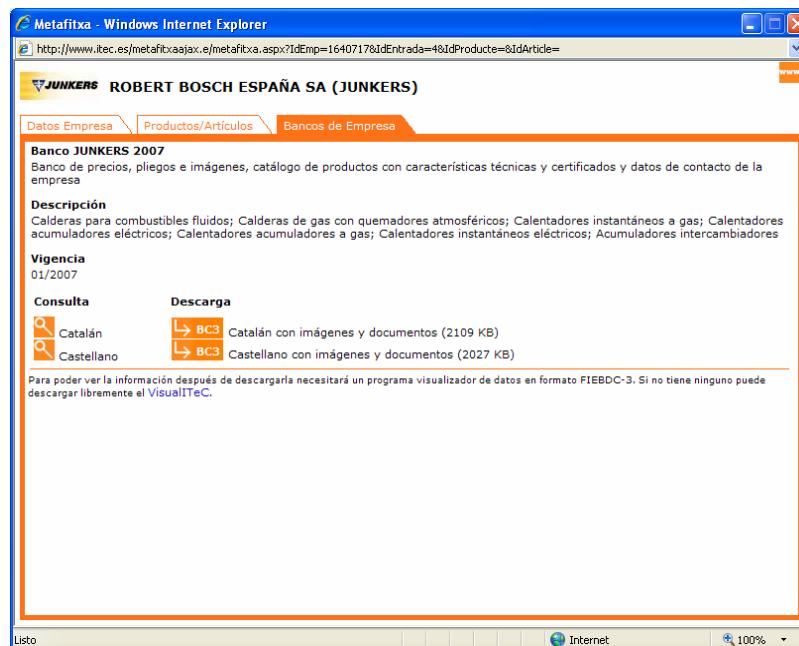


Figure 7. Consult (= consulta), download (= descarga).



Figure 8. Technical characteristics (= características), quality certificates (= certificados de calidad), images (= imágenes).

DRAG & DROP WITHIN THE INTERNET NAVIGATOR

One of the benefits of metaBaseITeC is the possibility of using a new Drag & Drop technique from within the user's Internet navigator. This is especially interesting for designers, as they can transfer the prices of the constructive elements (with all their related information such as manpower, specifications, characteristics, images, certificates, environmental information, etc.) directly to a budget created using ITeC's TCQ2000 program. TCQ2000 is a program that permits preparation of budgets, specifications, planning and construction tracking, etc.

If the elements that the user wants to drop are from Bedec or an Entitie DB, the program verifies if the user has license to do that and lets him continue or not. If the elements come from an Enterprise DB the program doesn't verify anything and the drop is for free.

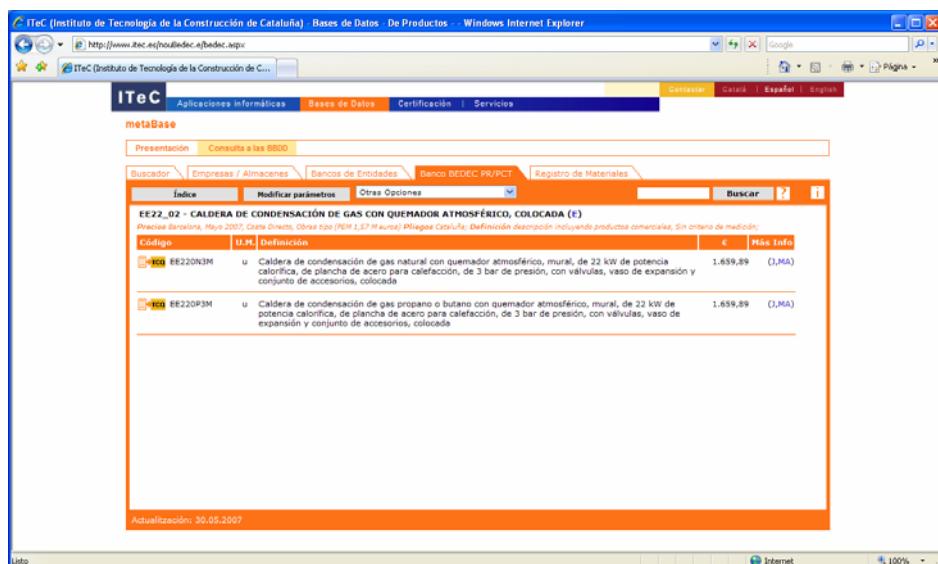


Figure 9. A constructive element and its related information can be drag & drop (by dragging the TCQ symbol) directly to a budget made using TCQ2000 program.

FUTURE

In the field of DBs, ITeC is currently working on the selling and acquisition of licences for the DBs directly from the web site, enabling users to create their own (one or more) DBs online using the elements of all the DBs included in the metaBaseITeC, and letting them share their DBs with other users, and finally, on the inclusion online of the TCQ2000 program. This permits more flexibility in the exchange of information between designers and in the need of information (specifications, planning and construction tracking, etc.) during the execution of buildings and works.

It has developed, but wants to increase, the interconnection between the constructive elements of the DBs with some CAD programs, to improve the the process of design with the obtention of quick related information and also for the necessary control and coherence in the documentation of a project.

B2B is also a field of interest mainly to convert a generic (or semigeneric) budget into a real budget (charges, discounts, etc.), with the developing of the interconnection between the constructive elements of the DBs included in a budget with the contractation sites of the enterprises.