SIEMENS

Consumer products

Fábregas

Innovation that improves the urban infrastructure

Products

Solid Edge, Femap

Business challenges

Modernize design and manufacturing processes to better compete against large multinational operations

Meet challenges of reducing product weight while adhering to strict governmental standards

Move from known practices of sand casting to plastic injection molding

Keys to success

Realistic computer images of products during the design stage

Ability to visualize manufacturing processes onscreen

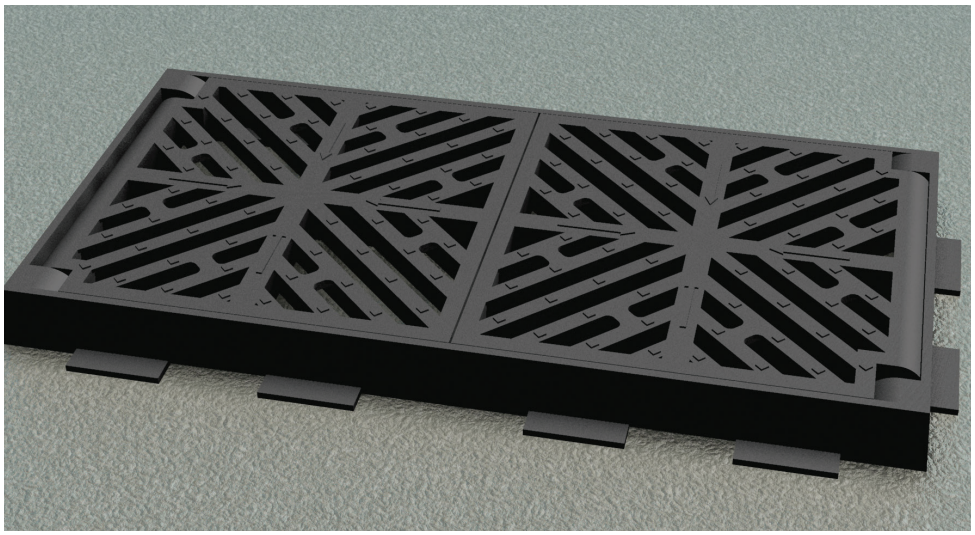
Finite element analysis for optimizing strength/weight ratio

Custom program for data management

Results

Faster product launches

Finding errors before production saves money



Optimizing product weight and accurately predicting production costs help this Spanish manufacturer succeed against multinational competition

A changing market with much competition

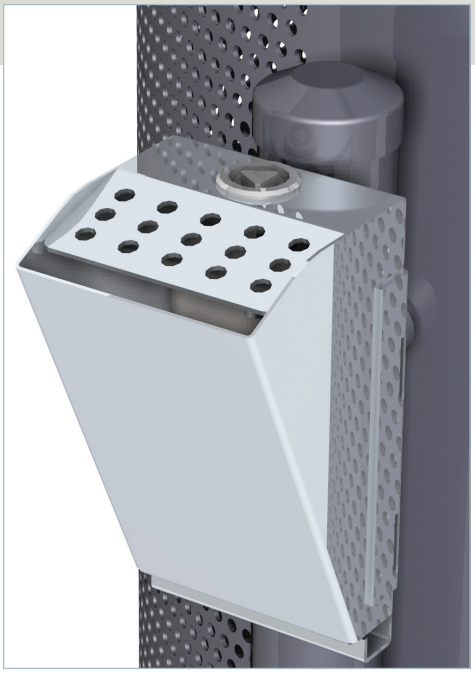
Fundición Dúctil Fábregas, S.A. has been involved in the manufacture of cast sewage covers and grates since 1917. Today, the company also designs and manufactures urban furnishings such as park benches, garbage cans, light posts and water fountains.

Sewage covers and grates have undergone considerable change since Fábregas started making them, both in terms of product characteristics as well as the production processes. The company's first foundry manufactured heavy, laminar cast sewage covers using completely manual design, molding and casting processes. The entry of large multinationals into the market made it necessary to modernize all stages of product development, particularly the design process. In this highly competitive market, the product is defined by its weight while strict standards put stringent limits on the design. Part optimization is fundamental if a company wants to be the market leader.

Results *(continued)*

Accurate prediction of costs ensures competitive products

Ability to work with new materials expands product line and saves forests



"The use of Solid Edge helps us continue being leaders in very demanding market sectors."

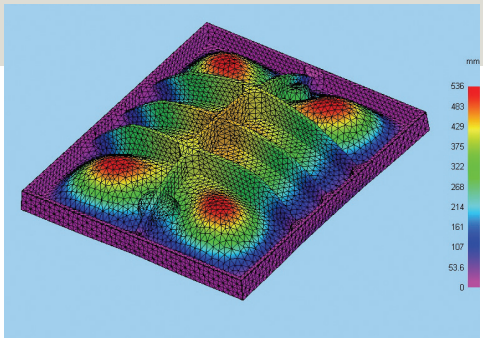
The urban furnishings market has been even more volatile. Today, design is an important aspect of these products. Fábregas' latest innovation in this market involves the use of new materials, such as using plastic as a substitute for wood, thus avoiding deforestation. This transition has been a great challenge because manufacturing with plastic injection molds is highly different from production with the sand molds the company normally uses for casting.

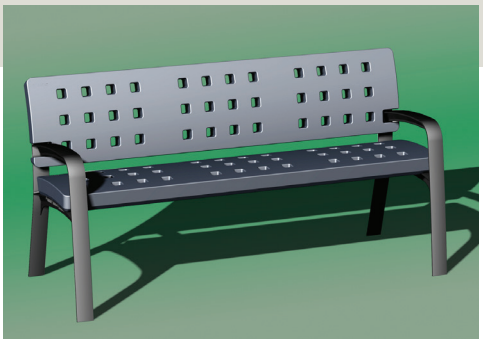
Meeting challenges with advanced design software

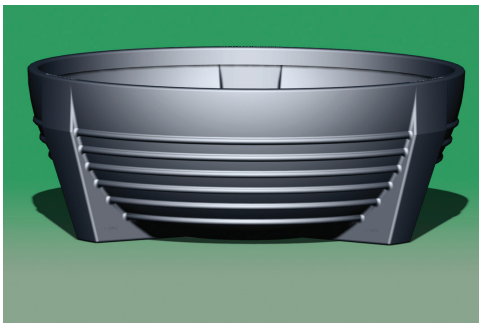
Software from Siemens PLM Software is helping Fábregas meet the challenges it faces in the markets it serves. For example, Solid Edge® software and Femap™ software are used to design sewer covers and grates as well as the molds needed for their manufacture. Using Solid Edge has enabled the company to better understand both the characteristics of a part and to predict its exact production costs. Moreover, it is now possible to detect design errors that previously were only found once the mold had been completed and the samples were already cast. Errors found at that stage made it necessary to modify the costly molds and caused considerable delays in launching a product.

Femap is helping Fábregas meet the strict requirements for sewer covers. The company must periodically run tests on the covers to be able to certify their performance. Now, using Femap to perform resistance calculations, the company can optimize designs for greater resistance and lower costs, ensuring that the covers comply with all standards, while achieving product launch times that would have been inconceivable in the past.

Solid Edge is also helping Fábregas in the design of urban furnishings. The latest trend in urban furnishings is a move toward combining various materials in the same product, such as steel, wood, castings, plastics and so on. Solid Edge incorporates tools that make it possible to re-create all the processes involved in manufacturing this type of product, such as folding and welding metal sheets, joining them with wood and bolting down each element.With all these elements reflected in the Solid Edge design, complete information is now available about manufacturing times and costs and about the quantities and types of all elements used.







Solutions/Services

Solid Edge
www.siemens.com/solidedge

Femap
www.siemens.com/femap

Customer's primary business

Fundición Dúctil Fábregas, S.A. designs and manufactures cast sewage covers and grates as well as urban furnishings such as park benches, garbage cans, light posts and water fountains.
www.grupfabregas.com

Customer location

Barcelona
Spain

Designing plastic molds for urban furnishings has been a challenge for technicians who, thanks to Solid Edge, have been successful in realizing three new products in an area that was totally unknown to them. And they achieved this without a single error because the first sample manufactured in each of the elements had been verified and approved. This represents a financial saving because, traditionally, it was necessary to modify the molds several times before arriving at the final part.

Moreover, designing in Solid Edge enables Fábregas to create products virtually and visualize them with Visual Studio+, modifying textures, colors and sizes to achieve a better result. Visual Studio+ achieves such a realistic depiction of a part that the company is able to appreciate how the final product will affect future consumers.

Extracting critical design information

Currently, Fábregas is incorporating a program created by its Solid Edge supplier, EFFORT Informática, S.L., that links Solid Edge with the company's data management program. The custom program extracts information about a part created in Solid Edge and incorporates it into the data management program's article record. In this way, the company avoids duplicating information in the different databases used for production, quality, commercial and billing processes and all information is completely up-to-date across all processes.

Previously, there was always the possibility that information at some point in the various departments might not be updated. The program from EFFORT permits automatic extraction of critical properties from Solid Edge designs, assuring that everything is up-to-date and that there is no possibility of error.

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