



BAUM Inside



FEM – Finite Element Method

In the course of the development in our company, we have already been dealing for quite a while with the Finite Element Method (FEM) as tool in our construction department. But what is "FEM"?

"FEM" is a calculation method to test all kind of components for peak loads. This method is very common in the automotive industry and is specially used in case of metallic materials. With this tool, and according to the geometry, the particular material parameters as well as the coding of exterior load conditions and connection requirements, weak spots or critical areas of components can be detected.

In case of tube systems using plastic materials, like e.g. PTFE, for corrosion protection, a more demanding test of the materials is necessary to be able to perform out a "FEM" calculation. The behaviour of these plastic materials is distinctly different to the one of metallic materials, and has to be calculated with special methods.

The extensive calculation results from the "FEM" calculation that deliver forces and displacements are nowadays displayed by means of colour screens, so that load peaks are clearly visible. Specialist engineers then interpret this display. Either, the conclusions are implemented into constructive optimisation or they are used for the definition of the load limit of the components.

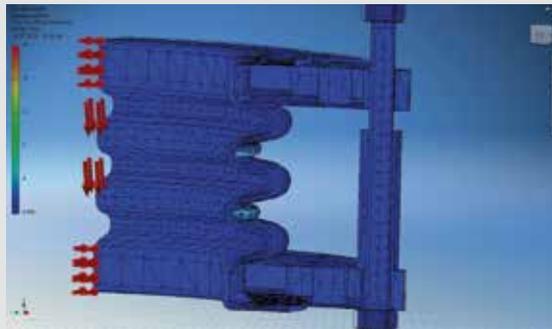
As the "FEM" calculation is a simplified depiction of the reality, the calculation results are, again and again, verified by tests in order to be able to estimate the deviation to reality. All in all, it is always surprisingly, how closely the prognosis achieved by the calculations is to reality.

Practical examples for the application of "FEM" calculations in our sector can be:

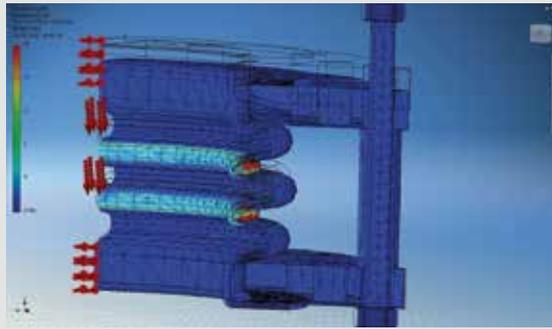
- Vacuum operation of components with different geometries and nominal widths
- Component stress by excess pressure or high temperatures
- Constant and alternating load by recurring movements, e.g. vibrations or compensation movements of expansion joints.



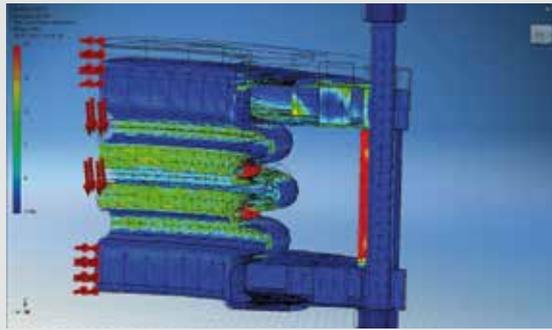
3D-Model



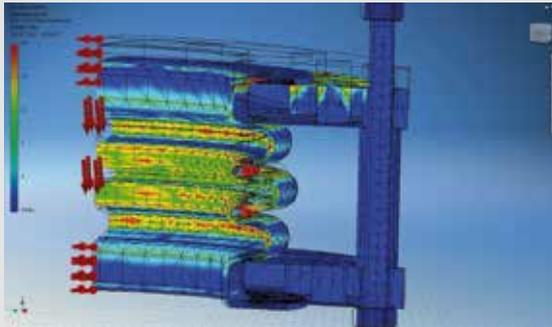
Unstressed component



Test pressure 3 bar;
Movement -20 mm



Test pressure 10 bar;
Movement -20 mm



Test pressure 16 bar;
Movement -20 mm

On the pictures you can see an application example: starting with a 3D-model, followed by a load simulation.

We make it colourful...

After having commissioned last year the new painting plant with drying room, we even topped this now.

Last May, a fully automatic dosing system for lacquers joined the painting plant. With this new machine we are now able to mix ourselves every existing RAL-shade from base coat paints. A central control manages hundreds of recipes, which can be recalled in if needed. "Mixing on the spot" makes us more independent of stock-keeping, sub-suppliers and delivery times. Thanks to that we can react even faster and on a more individual basis to your requirements.



BAUM Order Processing: We create connections

And we do this even mobile. In order to respond to ever-shorter getting planning times with a higher process safety, we invest in a mobile solution for the delivery processing of your project.

As each component has been specially produced for your order, the different order items merge after the production process in our shipping department.

There, the individual components are commissioned to your order and pre-packed without temporary storage.



In the course of the introduction of this mobile process, each component leaving our production is

marked with a label.

On this label our order number and other details for the quick identification of this components are indicated. Also your purchase order number and, if available, your isometry number are indicated on this label.

Thus, also after delivery of your order, each component can easily be identified on-site at your premises.



We support our delivery process with mobile scanners. These scanners provide our employees the necessary information from the packing of the goods, the dispatch preparations to the loading onto the truck. By scanning of the bar

codes of order, package and component, the required process security is guaranteed.

Each label printed at BAUM is unique. By means of the unequivocal bar code, exactly this component is allocated to a package and with the closing of this package, the delivery note is automatically generated and directly attached to the package.

Thus, your components are traceable in our production planning system, starting from the raw materials, over the different production islands up to the packing and the dispatch.

In this way, we further speeded up our processes and shortened the cycle times for your project at BAUM KUNSTSTOFFE. While, at the same time, we have increased our process security by the continuing digitisation. Thus, we reduce sources of error and make the information concerning orders that are ready for shipment available, without any delay, for further processing.

BAUM invests: Further expansion at BAUM KUNSTSTOFFE up to 2016

Due to the continuing strong business in the sector steel/PTFE in recent years, the management of BAUM KUNSTSTOFFE has decided to further strengthen this sector and to invest intensively.

Therefore, beside the new painting plant, a lacquer dosing and mixing installation was acquired, to be able to react more flexible to our customers' different colour requests or final coat. Now, we can mix any RAL-shade in-house and we are more independent from our sub-suppliers.

Shortly, the PFA department will receive two other preheating furnaces in order to further increase the capacity.

Furthermore, our laboratory is going to receive a new "home" – it moves into new, larger premises. The daily work in the laboratory on the current

orders will be expanded to include training areas, where, e.g. also creep rupture tests can be carried out from time to time.

A spacious dimensioned testing area in front of the laboratories enables us to invite larger groups and to hold an in-house training.

In addition, other investments have been made and will be made, which will be completed by the end of 2016. Due to the increasing number of employees, a new (additional) car park became necessary, which was finalized this spring - after all, the cars have to remain somewhere.

Some steps have already be implemented, others are still ahead of us – but, visit us and have a look! BAUM KUNSTSTOFFE continues growing and will remain being your reliable partner at your side.



Start construction works, here the enlargement of the car park for the employees.

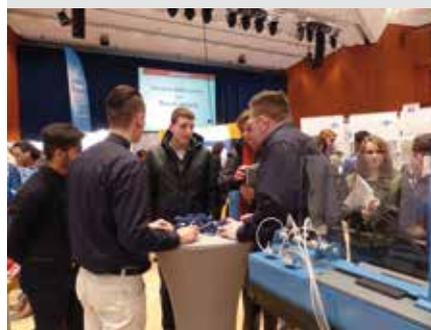
BAUM KUNSTSTOFFE on the Vocational Fair 2015 in Pforzheim

On Saturday, January 24th 2015, this year's vocational fair took place at the Congress Centre Pforzheim, and once again it could be seen that this fair became very popular. Training companies from throughout the region presented themselves to interested pupils, parents and applicants.



Our current apprentices and instructors represented us there. The booth was highly frequented, for sure not only because of the slush machine for ice cream, as a lot of serious questions were asked. For example: Which apprenticeships do you offer? Where are the vocational schools? Which profes-

sional career opportunities are there after the apprenticeship? Which contents are taught.



At the same time, the fair is for BAUM KUNSTSTOFFE, always and very good opportunity to present itself as an attractive employer. Thus, beside the usual applications for an apprenticeship, we also received applications for jobs with work experience. In the meantime, our vacant apprentice positions have been filled. We are pleased to learn about wishes and desires of the applicants. Thus, we are working on an affordable

and prompt solution for young apprentices without driving license so that they can quickly reach their work places.

INext year we will be represented again at the fair.

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