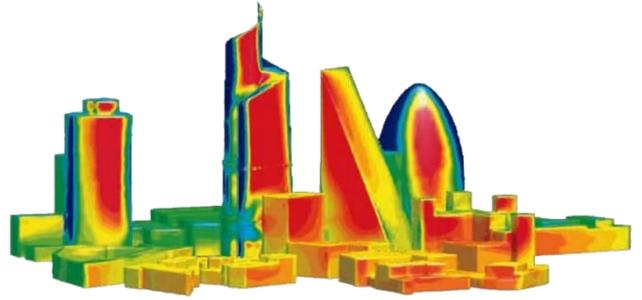


FAÇADE WIND LOADS

The interaction of the facade systems in the buildings with the winds
Sustainability, security and profitability

alkazar

We show the interaction of the facade system, which is one of the important components of your building, with the winds in the project location. Damages and problems that may occur on the facades caused by the wind can lead to cost increases, reputation losses and even loss of life in your project. You can achieve sustainability, security and profitability by choosing the right façade systems with the simulations we will apply in your buildings and projects.



Various norms or standards can be used for facade load calculations. The TS498, EN 1991-1-4 and ASCE 7-10 norms and standards output for major building types and heights. But for high-rise buildings (10 floors and above) or skyscrapers (20 floors and above), the standards are insufficient in calculations. In such cases, calculations with the simulation approach come to the fore as the primary method in terms of cost and time. Compared with analytical and experimental studies, the speed and detail of the service will be your main advantage.

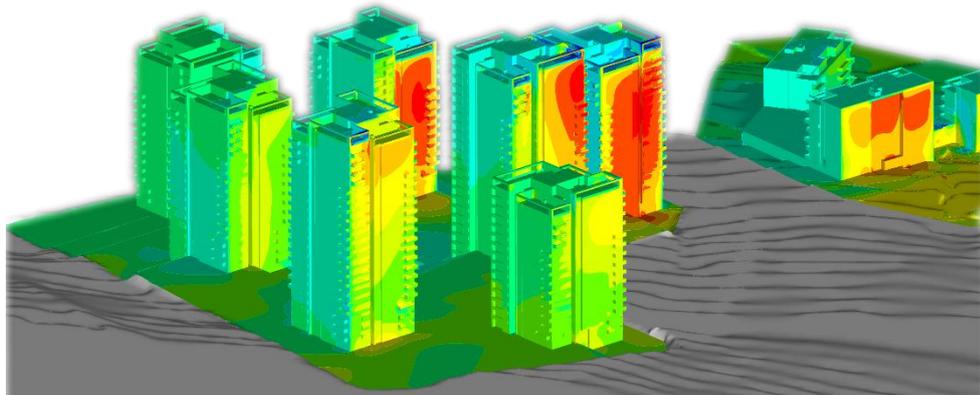
What can we do for you?

While working within your achievements and goals, with our climate data processing expertise, we ensure that your façade systems are low-cost and safe by participating in projects. We can analyze residential and commercial buildings of all shapes and sizes, including high-rise buildings, stadiums, airports, convention centers, sculptures, solar power plants and many other private or complex structures. The critical situation in which the standards are not sufficient in calculating the facade loads is that the wind velocity increases upwards, it is not possible to predict how many km / h of wind will be blown at different heights from the project building and surrounding buildings. We are at your service as an independent consultant to save you from this problem with our experience of quickly evaluating computing skills and concepts.

We eliminate the kinds of curiosities listed below:

1. Can the extra investment cost of the wind load brought to the façade system be reduced?
2. Can excessive wind loads be detected at unforeseen points?
3. How critical is the load in which areas of the project building can we see it in detail?
4. What kind of changes can be applied to the form to reduce wind loads caused by certain types of designs?

First, these questions are answered quantitatively. Then, based on our experience, we go beyond the numbers to provide integrated solutions.



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TO BE YOUR MOST VALUABLE PARTNER...

ALKAZAR,

Explores Innovations

We always renew ourselves in order to use the latest technology in the best way. We do not stop looking for information to make our analysis better every day.

Creates Opportunities

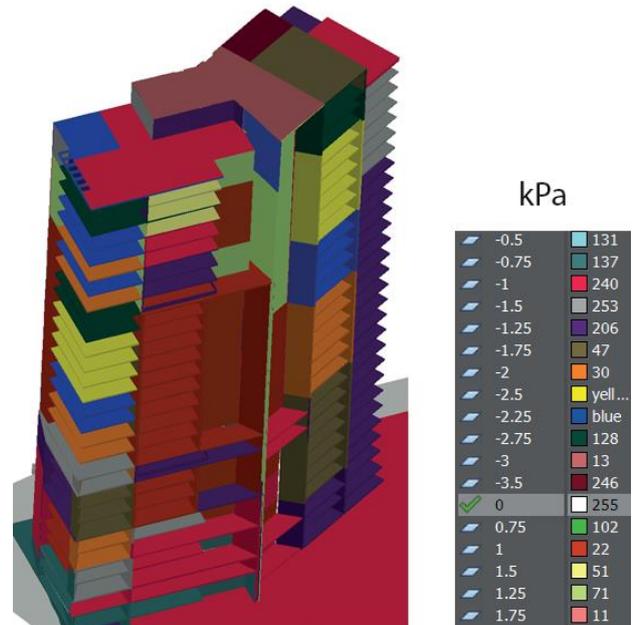
Our knowledge and experience we have obtained as a result of our analysis brings you unique designs with different possibilities in facade design.

Meets Challenges

We plan strong wind events in the project area where the work will take place and we will examine the different attempts to be made for costly situations to the end.

Fulfills Your Expectations

We offer you the reporting you want to achieve, with fast revisions, in constant communication, and support you uninterruptedly in the process.



How do we work?

The model created in flow analysis studies must have a perfect geometric form (watertight). When creating the perfect model, if there is no curvature in details under 10 cm, it is not included in the model and is neglected. While the analysis mesh structure of the regions where the project building to be analyzed is frequently created, the frequency of mesh is reduced as the surrounding area expands towards the volume. The critical issue here is a mesh to protect the atmospheric boundary layer to be applied.

The buildings around the project structure are exposed to wind in very different directions and intensities due to the topography or form of the building itself. The pressure created by the direct wind coming into contact with the wind coming across it is called "positive load", and the pressure of high wind intensity passing through it or "suction-negative loads" is called. In general, negative loads (expressed in kPa or kgf / m² units) formed on the surface where the wind passes rapidly are higher than positive loads.

In the calculation of the facade loads, all surrounding buildings within 1 km diameter are modeled with topography detail and wind is applied to the project buildings from 36 different directions with an angle change of 10°. The highest compression and absorption loads for each direction are recorded on the facade. For 36 different situations, the highest of these negative and positive recorded loads are processed in a single image and delivered in a 3D model and report.