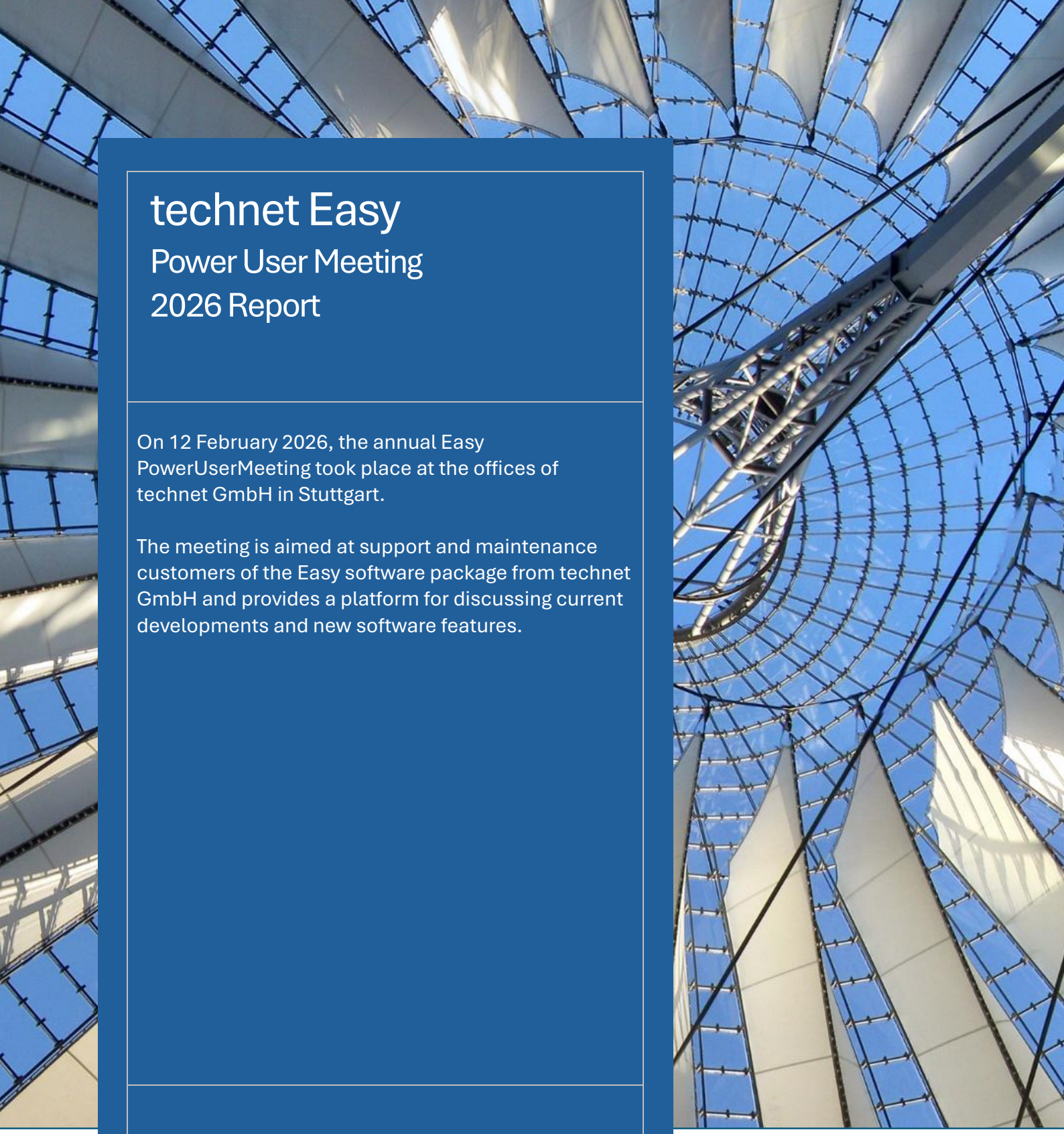

technet Easy

Power User Meeting 2026 Report

On 12 February 2026, the annual Easy PowerUserMeeting took place at the offices of technet GmbH in Stuttgart.

The meeting is aimed at support and maintenance customers of the Easy software package from technet GmbH and provides a platform for discussing current developments and new software features.

February 2026

technet gmbh

technet GmbH, Breitscheidstraße 4, 70174 Stuttgart, www.technet-gmbh.com

Report February 2026

The Easy software package is proven for the end-to-end planning and calculation of membrane and cable net structures. With its specialised modules, it covers the entire workflow – from initial form finding and complex structural analysis to precise cutting pattern generation.

The presentation slides are available to maintenance and support customers in the protected download area at www.technet-gmbh.com.

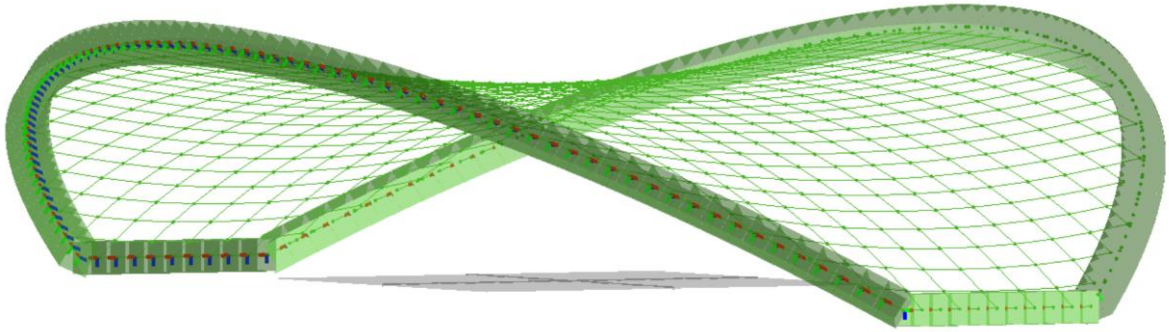

Figure 1: Steel frame with cable net.

1.1 Review of the event

The aim of this year's meeting at our offices was to give users a comprehensive overview of the latest developments, highlight the specific added value of the innovations and discuss forward-looking use cases.

The fact that the Easy software package plays a central role in the international market was also reflected in the group of participants. With around 30 experts from all over Europe, the event was filled to capacity and provided the ideal setting for a lively exchange of knowledge. In order to meet the needs of the international audience, the entire event was held in English. The response was excellent again this year: in a productive atmosphere, a lively exchange developed between developers and users, strengthening cross-border cooperation in the industry.

1.2 The main topics in detail

The programme offered an in-depth technical examination of the following key topics:

- **Easy.Static – New functions and selected use cases:** Presentation of the latest features in the structural analysis module, supplemented by practical case studies demonstrating the increase in efficiency in everyday engineering work.
- **Formfinding & Methodology**: Special attention was paid to formfinding in Easy.Static and the introduction of the Moment Density Method, which opens up new mathematical approaches to form generation.
- **Modelling & interfaces**: BRep2Easy is a powerful model generation tool that simplifies data transfer and geometry preparation between the Rhino® CAD application and Easy Software.
- **Special applications:** Participants gained insights into the modelling of cables and cable nets on surfaces – a decisive factor for the precise design of complex structures. In addition, innovations in Easy.DWT (digital wind tunnel) were presented.
- **Material behaviour & elements**: The introduction of non-linear material models and new options for membrane sliding over beams enables even more realistic simulation of membrane structures.
- **Dialogue and outlook:** The session concluded with a discussion and “Questions & Answers”. Participants shown great interest in the new features and provided valuable feedback through their practical application examples.

The diversity of perspectives provided a valuable basis for open exchange and highlighted both the enormous potential of the technology and the existing concerns and challenges in everyday use. Such direct dialogue is indispensable for us: it ensures that the further development of Easy does not take place in a vacuum, but remains closely aligned with the real, complex requirements of construction practice in the future.

1.3 Easy.Static – New features

One of the first topics discussed at the meeting was the presentation of the expanded functionalities in Easy.Static. To maintain clarity, the new features were divided into different functional areas. Bernhard Simmler addressed the following topics:

Optimised import functions

The existing import functions have been fundamentally revised and supplemented with new options. The aim was to make data exchange more efficient:

- **Add point and link file...:** This function can be used, for example, to subsequently integrate a primary structure into an existing membrane structure in a topologically correct manner, whereby the points are merged on the basis of identical names.

- **Import definitions from Easy project databases:** Materials, cross-sections and existing load cases can now be imported from other projects and directly assigned to the corresponding elements.

- **New import dialogue for sliding cables:** Cables and cable nets on surfaces can now be calculated directly during import and prepared for structural analysis. This topic was explored in greater detail later in the event.

Modelling and surface properties

Two significant innovations relate to the way in which geometries are defined and modified in the system:

- **Advanced element types:** The range of available link types has been expanded to include the new 'Spring' type. In addition, there is a new option for the existing 'Beam' and "Strut" types that allows them to be set to 'Only compression' (pure compression bar). This allows for more precise modelling of real construction details.
- **Surface elements without membrane materialisation**: A new option has been introduced for importing surface elements that do not necessarily have to be materialised as membrane or cable net surfaces. The surface type 'Leave link attributes unchanged' is used for this purpose.
- **Replace model point and link attributes**: This method allows you to define a new start geometry as a model, for example, while retaining the unstressed lengths – and thus the relevance for subsequent cutting pattern generation. This enables you i. e. to simulate the lowering of an inner membrane onto the belts of a biogas plant (see next image).

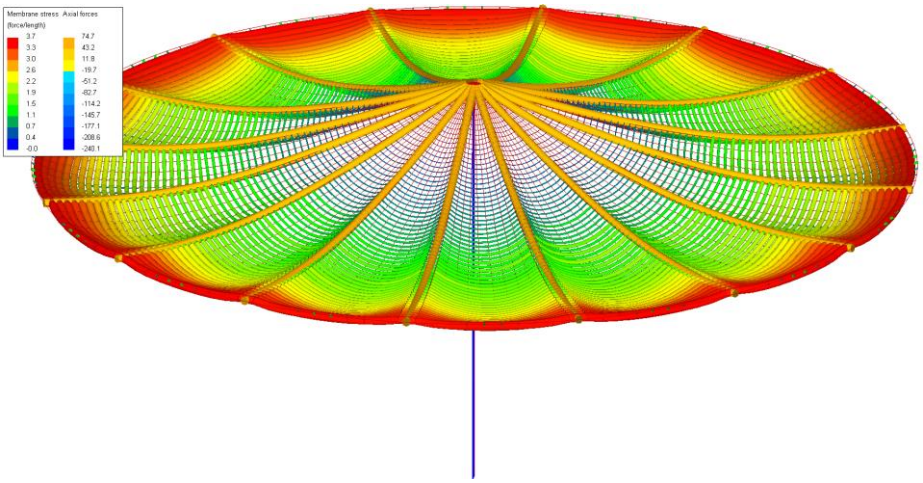

Figure 2: Inner membrane of a biogas plant lowered onto belts.

Project management and workflow

Special emphasis was also placed on user-friendliness in everyday handling. Work steps can be made more intuitive and secure:

- **Centralised organisation of load cases and models**: The management of load cases, load case combinations and imperfection models has been fundamentally revised. Users now have centralised dialogues available for these tasks, which significantly increases clarity in complex projects and reduces the risk of errors.

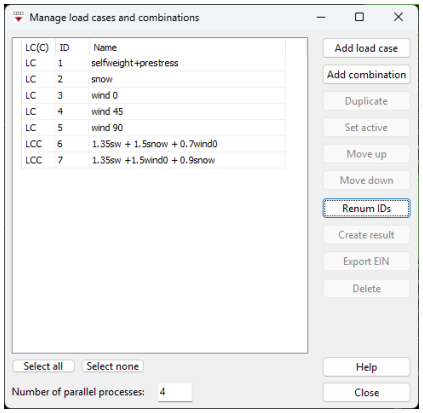

Figure 3: New central dialogue for organising load cases.

- **Advanced shortcuts:** Additional keyboard shortcuts have been introduced to speed up frequently used commands. This allows for smoother operation of the software without having to take your focus away from the graphic editing.

- **Save as... function**: A frequently requested user feature has been implemented. The introduction of the classic ‘Save as...’ function for already opened projects provides greater security and flexibility when creating variants or backups during the ongoing editing process.

1.4 Easy.Static – Selected use cases

The presentation of the technical innovations was followed by a smooth transition to practical application. Ulrike Gründig-Tsoukalas presented how these tools are used in a presentation entitled ‘Selected Use Cases’.

She used real-life examples to illustrate efficient modelling in everyday project work. A particularly detailed example demonstrated the flexibility of the software: it showed how easy it is to define different membrane materials within a contiguous membrane surface. This is important in practice, for example, in order to specifically account for locally limited, sharply increasing membrane stresses at high points through the use of reinforced materials.

1.5 Cables and cable nets on surfaces

Following the presentation ‘Selected Use Cases,’ Kai Heinlein explored the topic of modelling in greater depth with his contribution ‘Cables and Cable Nets on Surfaces.’ He began by providing a systematic overview of the wide range of possibilities offered by the Easy software package in this area. Using a graphical overview, he explained the theoretical basics before delving deeper into the specific functions with detailed practical examples.

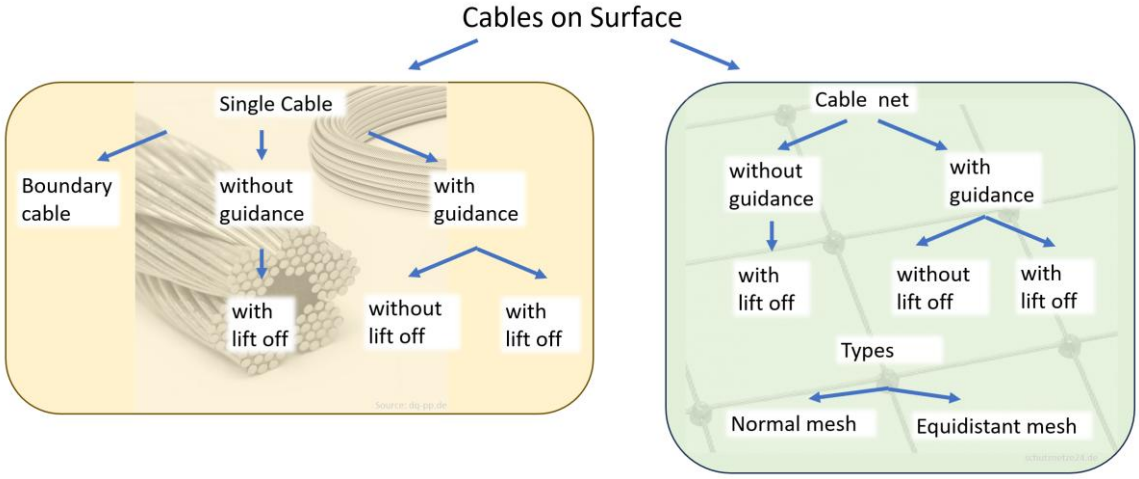

Figure 4: Overview of the possibilities with cables and cable nets in Easy.

- **Sliding Boundary Cable**: Demonstration of how to handle boundary cables that allow free sliding along the edge while taking belts into account.

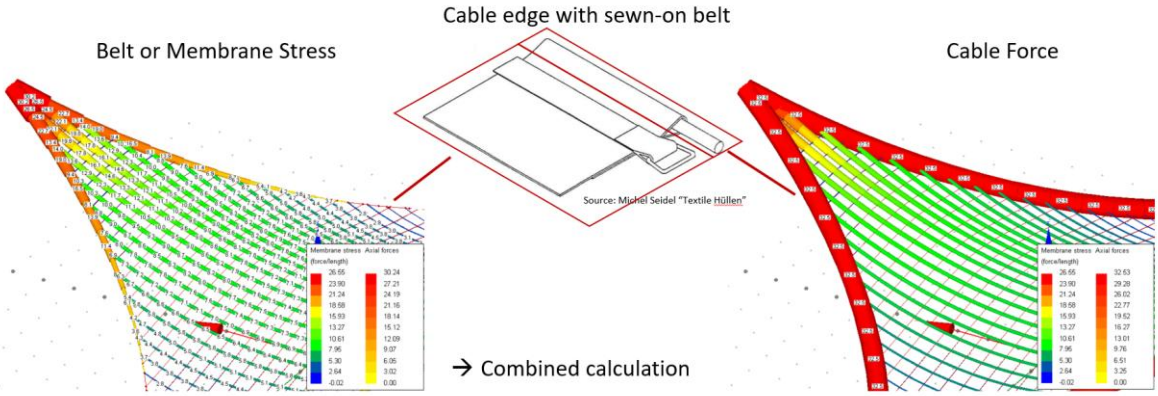

Figure 5: Tensions and forces for belts and edge cables

- **Free Sliding Cable on Membrane Surface**: Presentation of cables on membrane surfaces that align as geodesic lines, thus ensuring optimal force balance within the structure.

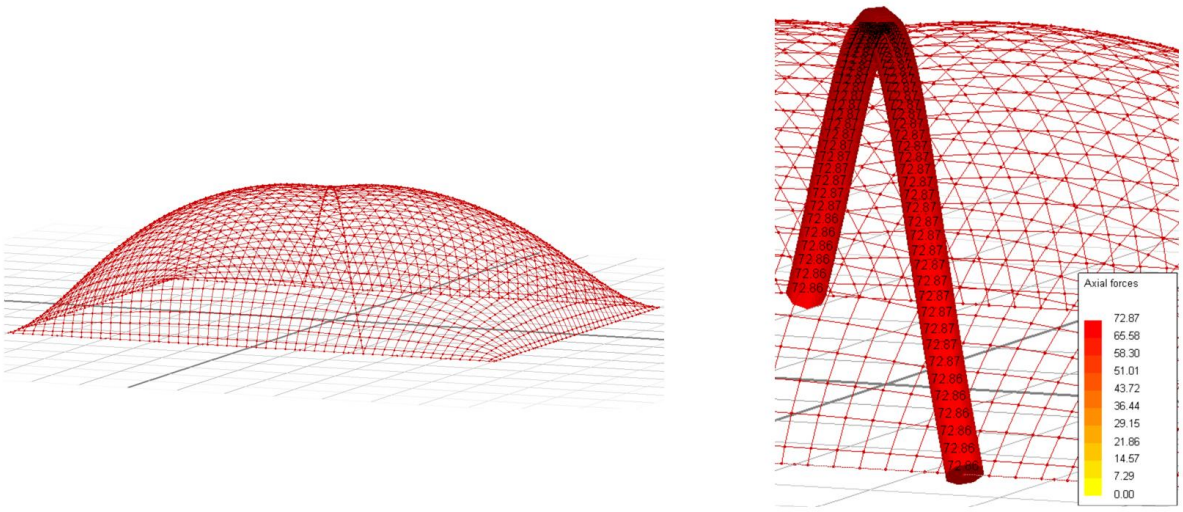

Figure 6: Free sliding of a cable on a membrane surface.

- **Guided Sliding Cables:** Special focus was placed on guided sliding cables on the membrane surface. The variants ‘above surface’, ‘attached to surface’ and ‘below surface’ were compared in detail in order to accurately reflect the structural reality in the model.

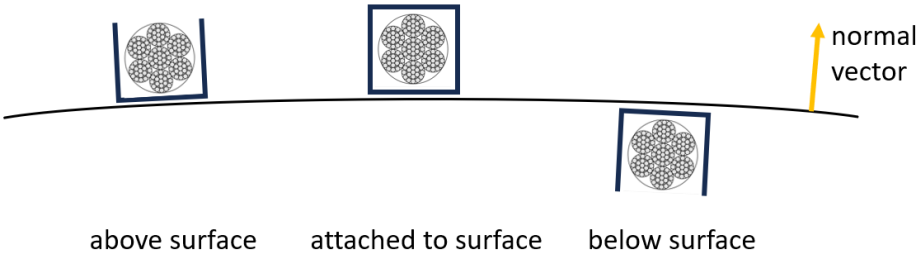

Figure 7: Options for the Guided Sliding Cable

- **Lift-off** effects: In addition, the simulation of guided sliding cables was demonstrated, taking into account lift-off effects, which are particularly crucial for stability in changing load conditions.

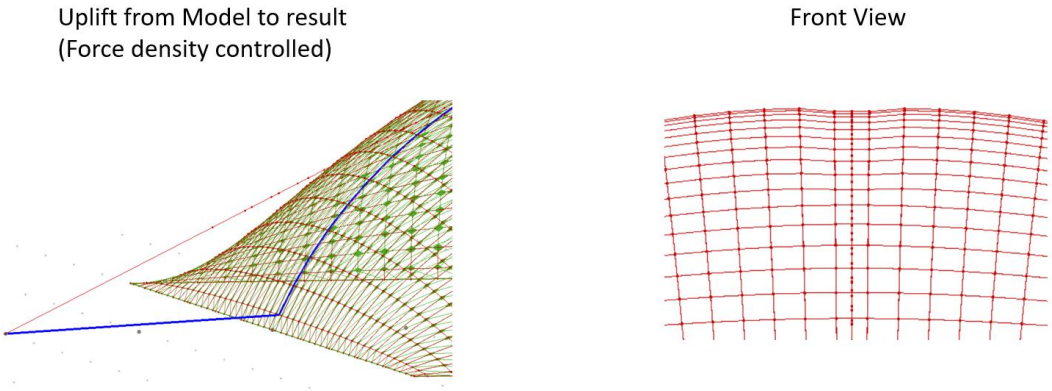

Figure 8: Lifting the sliding cable.

- **Cable nets on surfaces**: Finally, Kai Heinlein explained the modelling of cable nets on surfaces. He highlighted the key differences between non-equidistant and equidistant cable nets. Equidistant nets in particular offer enormous advantages in

manufacturing, as they significantly simplify the unwinding and cutting of cable net structures and make them more efficient.

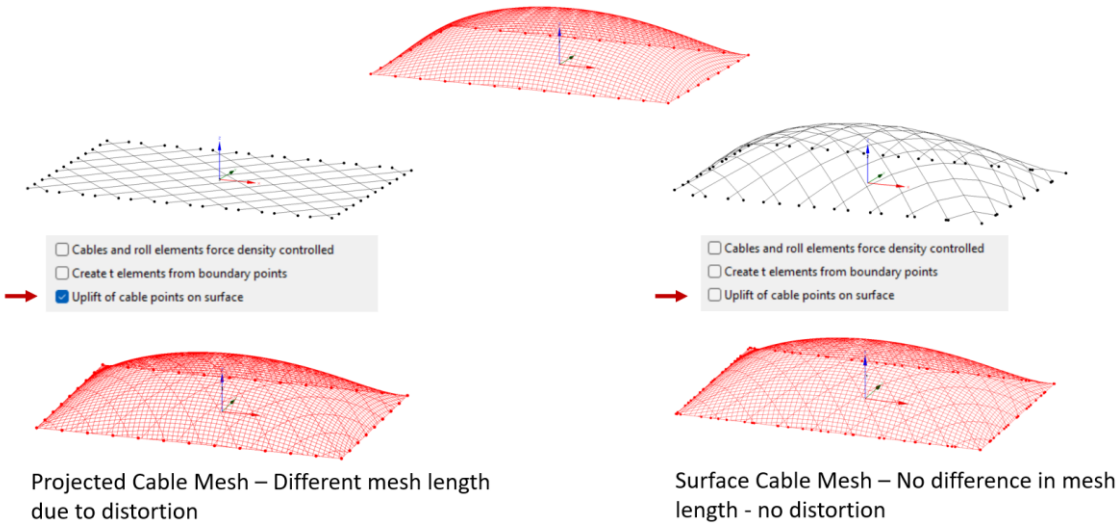

Figure 9: Different options for calculating a cable net on the surface.

1.6 Innovation in shape generation: Moment Density Method

After the joint lunch break, Peter Singer continued the programme with an insight into the theoretical principles of the software. The focus was on the 'Moment Density Method', which he compared in detail with the established 'Force Density Method'.

The method makes it possible to define complex geometric shapes and, by variating specific parameters, to open up new creative possibilities in the generation of geometric shapes.

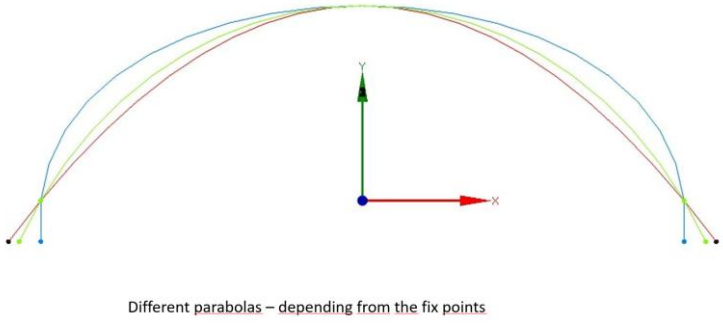

Figure 10: Parameter variations and resulting shapes.

The diverse possibilities for parameter variation were demonstrated using clear examples and then discussed in dialogue with the participants.

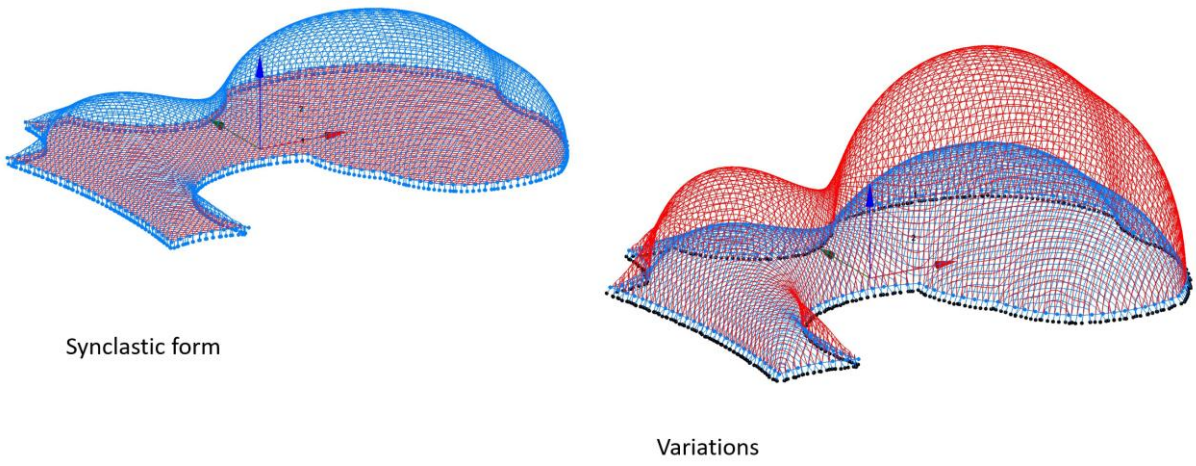

Figure 11: 3D geometries based on the moment density method.

1.7 Model generation with BRep2Easy

Another key topic at the specialist user day was the modelling of complex pneumatic tube structures. As customer interest in designing such projects first in Rhino® on the basis of Nurbs surfaces and then converting them into a computable Easy model is growing steadily, Juergen Holl examined this workflow in detail.

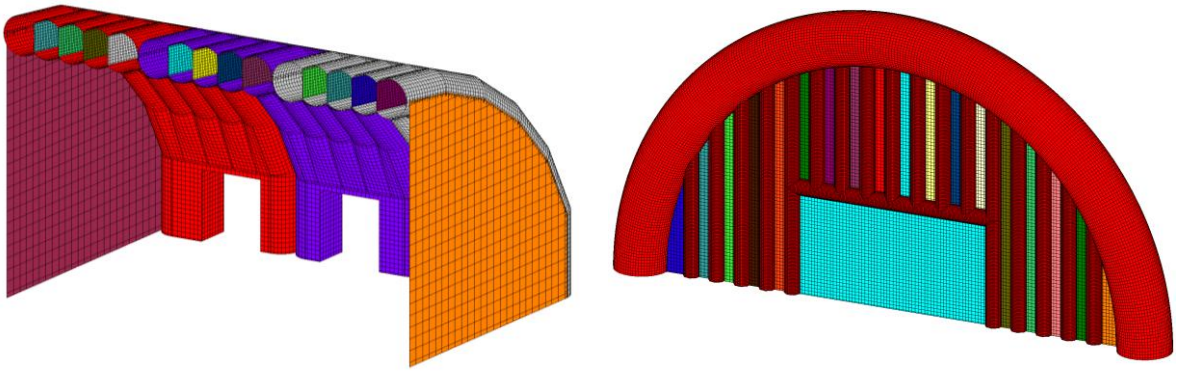

Figure 12: Pneumatic tube structures combined with mechanically tensioned membrane surfaces. Left: System with three independent chambers – Right: Example of an entrance portal to a hangar with one chamber. The chamber is formed by the circular arc tube and the small vertical tubes.

The technet plugin BRep2Easy serves as the key interface here, and its functionality has been explained based on two main aspects:

- **Importance of surfaces and polysurfaces**: The quality of the calculation model depends entirely on the definition of the surface groups. It has been demonstrated how clean modelling in Rhino® forms the basis for precise and rapid conversion into a structural analysis model that already includes, for example, the pneumatic chambers. The following images show Easy structural analysis models that have already been converted. The chambers have already been created.

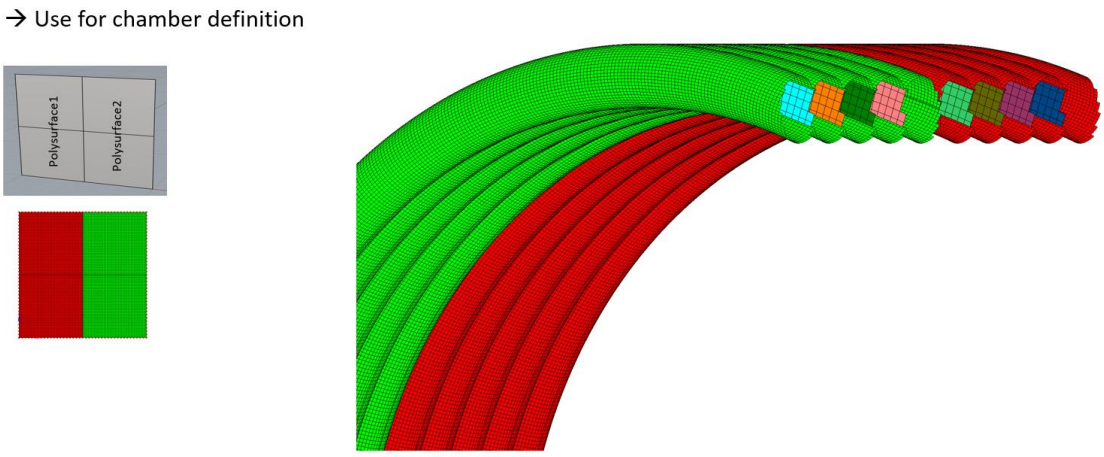

Figure 13: Automatic chamber formation (2 chambers) through Polysurfaces.

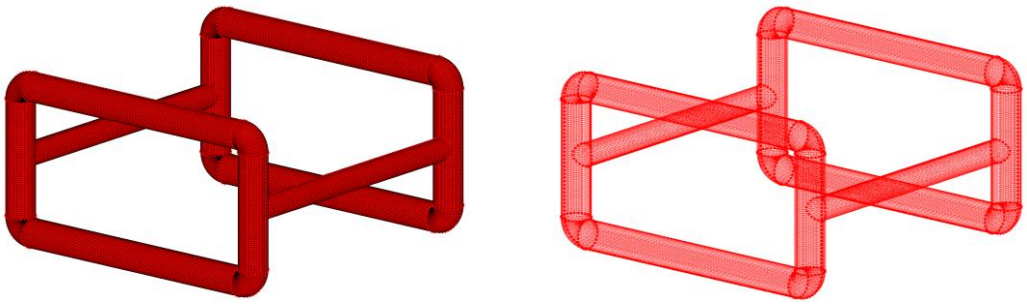

Figure 14: Spliced pipe systems as a static model, shown here with 1 chamber.

- **The importance of Rhino® Edges:** Special attention was paid to the relevance of edge information (Rhino® Edges). These are essential for BRep2Easy to correctly interpret the topological structure of the components and prepare them for static analysis. If the edges of adjacent surfaces are clearly defined, it is very easy to create topologically correct node-edge models on this basis. This ensures that the force flow between the individual components is accurately represented in the subsequent calculation model.

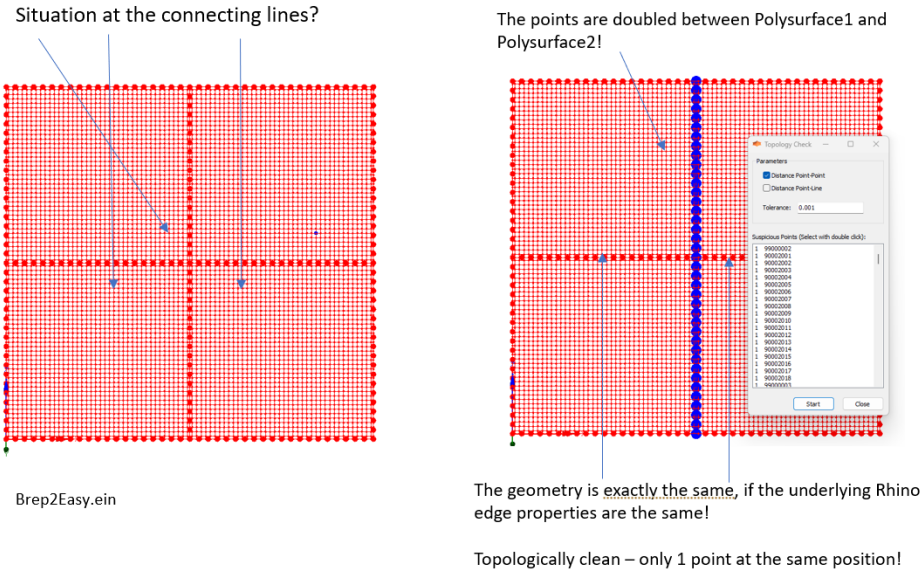

Figure 15: Issues with adjacent areas.

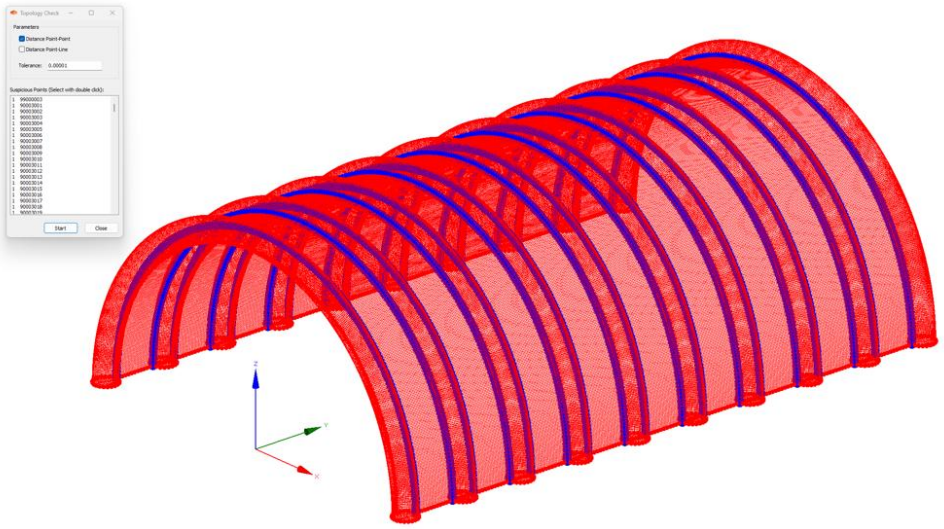

Figure 16: Connection of the membrane surfaces via identical edges.

- **Practical implementation**: Accompanying comments highlighted how this process reduces the error rate and significantly speeds up the transition from design to structural analysis. Participants gained valuable insights into how to avoid problems during data transfer.

1.8 Innovations in the digital wind tunnel (Easy.DWT)

As was the case last year, the topic of the digital wind tunnel attracted considerable interest. The focus was on functional enhancements that enable even more detailed evaluation of wind loads:

- **More precise surface analysis**: With the new option ‘Separate files for both sides’, it is now possible to create separate files for each side of double-sided geometries. These are automatically labelled with the suffixes “_S1” and ‘_S2’, which allows separate analysis of the cp values for both sides of the surface.

- **Optimised processor utilisation**: The default value for the number of processors used has been increased to 8. The reason for this is that the maximum number of logical cores in modern processors (due to the division into efficiency and power cores) is often not the best value for computing power. Instead, it is recommended to use only the number of real power cores and to refrain from hyperthreading in order to optimise performance.

- **Efficient result generation**: An important note regarding the workflow concerns the calculation time: To generate results with changed settings, a complete recalculation is not necessarily required. This can be initiated directly via the submenu item “Generate Easy results,” which saves time.

- **Documentation and support:** In order to provide users with optimal support in implementing these complex innovations, the accompanying literature has also been comprehensively updated. The user manual has been supplemented with numerous sketches and detailed explanations.

- **Accuracy in data transfer: Matching & missing triangles:** A critical point when transferring pressure coefficients from OpenFOAM® to the Easy model is the geometric consistency of the Easy and OpenFOAM® meshes. The following parameters and dependencies were explained to ensure correct load transfer:

  Matching process: The pressure value is measured at the centre of gravity of each Easy triangle. The maximum permissible distance between the OpenFOAM® and Easy meshes is defined by the “Matching threshold.”

  Option “Complete missing triangles”: If no direct match is found for a triangle in the wind tunnel mesh, Easy automatically fills these gaps with the values of neighbouring triangles.

  Quality control: The proportion of successfully matched areas is displayed in the log under “Triangles with match.” This value is a direct indicator of the model quality and must not be too low.

  Important safety note:
  The “Complete missing triangles” option must not be used if the model contains

triangles in an enclosed space that cannot physically be reached by the wind (e.g., the triangles inside the tubes in the image). A “Match” value of less than 90% is a strong indication of such a case and requires manual verification of the settings.

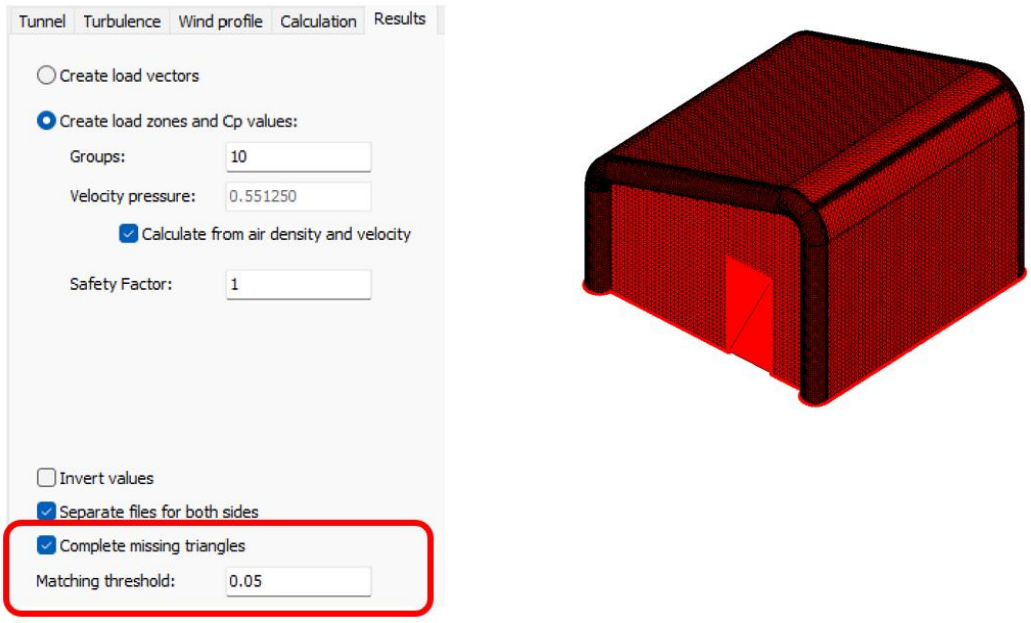

Figure 17: “Complete missing triangles” checkbox and “Matching threshold” value.

- **Definition of wind speed and dynamic pressure:** A key point of discussion when using the digital wind tunnel was the correct definition of the input values in order to achieve results that comply with standards:

  The value “Wind velocity” from the “Tunnel” tab is always used for the wind speed u. When using wind profiles, u should correspond to the wind speed of the undisturbed flow at the upper edge of the model u(h) (recommended in WTG Merkblatt M3).

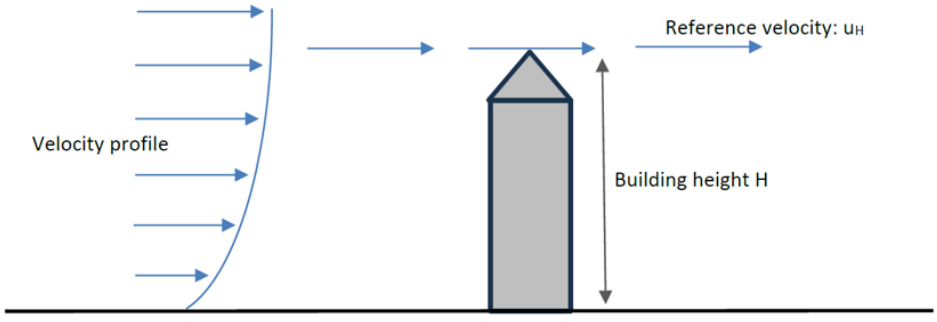

Figure 18: Reference velocity in the case of wind profiles.

1.1 Efficient form finding: Simplified application of “mixed form finding” in Easy.Static

Another topic that was discussed intensively by the participants in the afternoon was “Mixed Formfinding with Beam Elements” in Easy.Static. Kai Heinlein demonstrated how a complex problem was transformed into an easier application thanks to new software approaches.

The challenge in practice: In membrane construction, the following problem often arises when using beam elements: If the cutting patterns are determined based on undeformed beams, the membrane loses its prestress after installation because the beams deform elastically. The desired target prestress is therefore lost in the “prestress” load case.

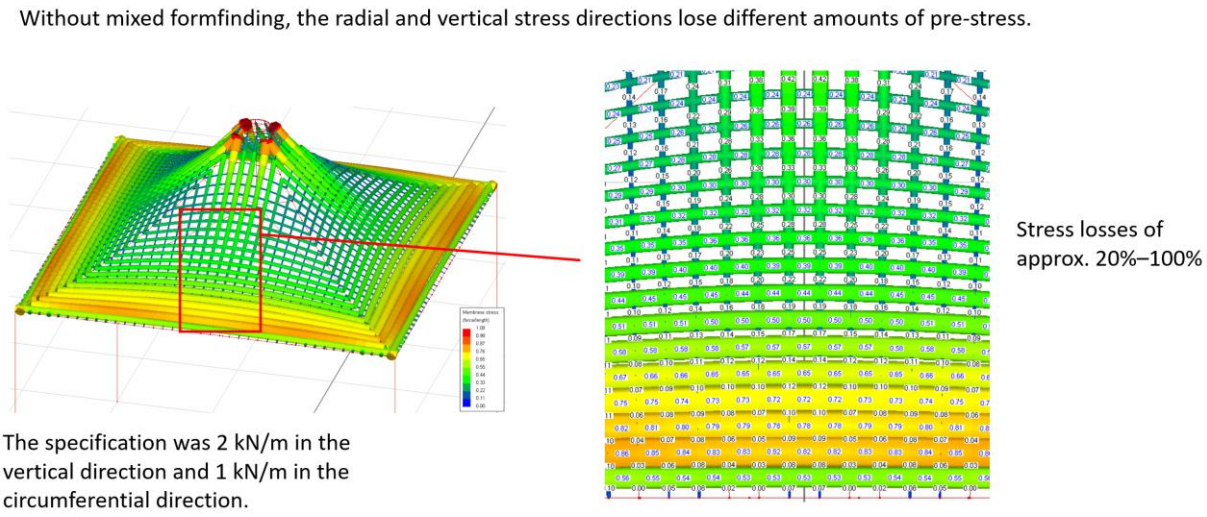

Figure 19: Example of stress loss due to beam deformation.

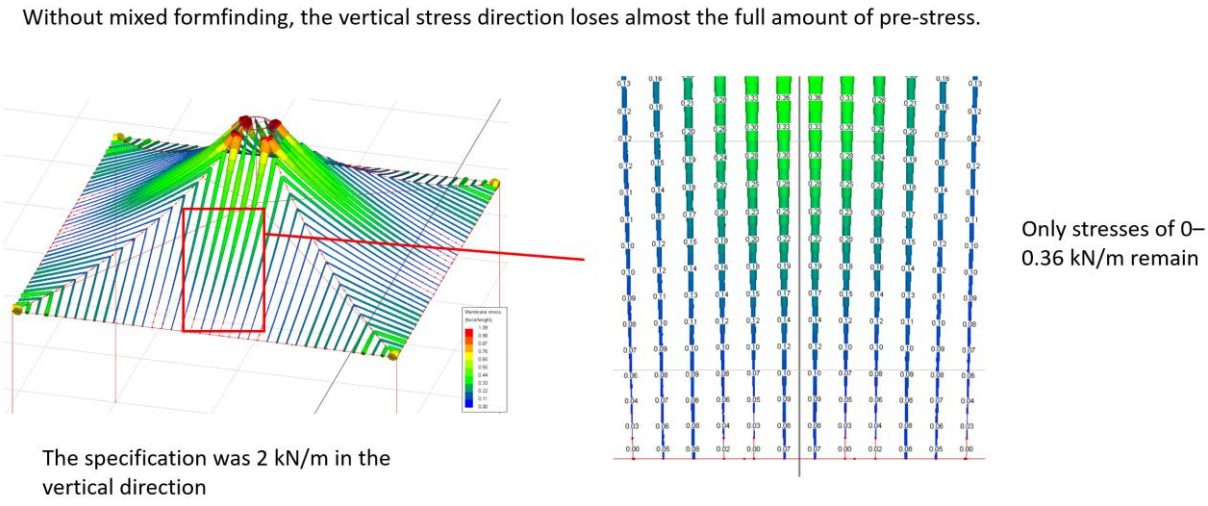

Figure 20: Representation of stresses in the vertical direction.

The solution in Easy.Static: To account for this effect, Easy.Static now allows for the uncomplicated implementation of mixed form finding, even with beam elements:

The membrane and boundary cable elements are initially defined using force-density control, while the beam elements are simultaneously calculated using elastic control.

Once this mixed form-finding process is complete, the transition to a fully elastic control model takes place. The result of the prestress load case shows the expected prestress values in the membrane.

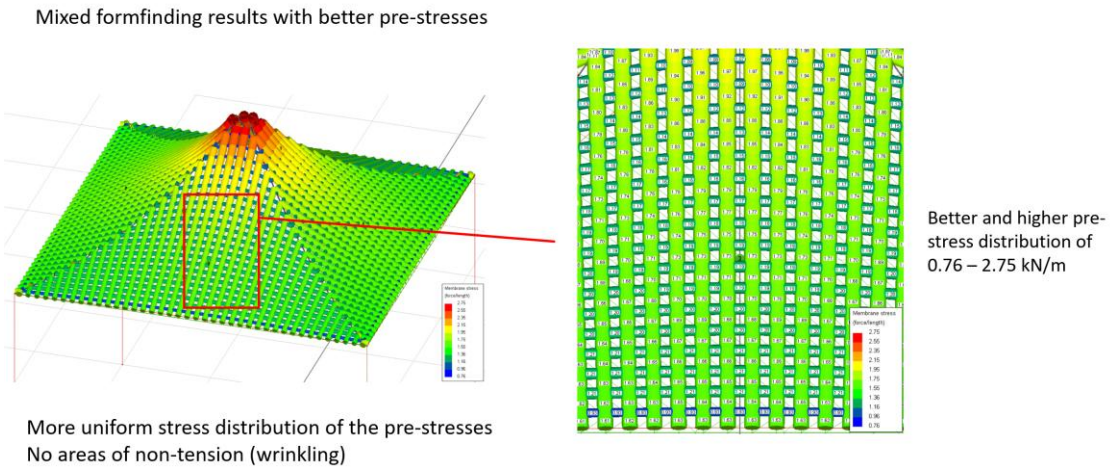

Figure 21: Improved stress situation through mixed form finding in Easy.Static

Summary and conclusion:

The participants' discussion confirmed the added value of this process:

- **Precision:** For bent components that always exhibit deformation when prestressed, mixed form finding enables better preservation of the prestress.

- **Manufacturing relevance**: Cutting patterns or mesh plans must be generated based on this newly calculated geometry in order to reflect the physical reality in the prestressing load case.

1.10 Material behaviour and future developments

At the end of the day, Dieter Strobel gave a detailed preview of nonlinear material and upcoming innovations in Easy. First, three key enhancements in the area of nonlinear calculation and element types were discussed. These enhancements have already been implemented in Easy Release 2026.

- **Nonlinear membrane material**: Enhanced simulation of membranes, taking nonlinear material properties into account.
- **Nonlinear cables**: More accurate representation of cable behaviour under large deformations.
- **New link type "Spring"**: Introduction of a new spring element for even more detailed representation of elastic boundary conditions.

A particular highlight was the comparison of current and future methods for sliding membranes over beams:

- **Status Quo (Roll Elements**): The current method using roll elements was demonstrated using a practical example. One disadvantage of this method is that the membrane links (Mem-links) must meet at the sliding beam, which limits the net generation.
- **Future outlook:** The new method of "staggered models" was presented using an example. The key advantage here is flexibility: the membrane links can be arranged in a staggered manner, which significantly reduces the modelling effort.
- **Release planning:** This innovative option for flexible networking of sliding structures is scheduled for release in 2027.

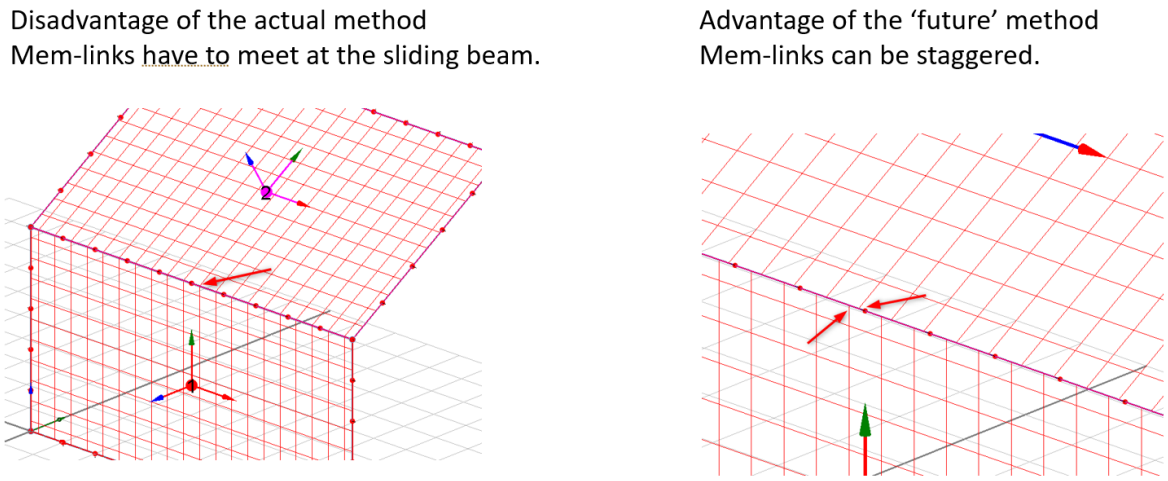

Figure 22: Comparison of current and future methods for sliding membranes.

The following image illustrates the free gliding of the membrane over a crossbeam. While wind suction acts on the two front sections, the back sections are subjected to pressure. The load-bearing behaviour is clearly visible here: in the front section, the entire membrane lifts off, while in the rear section it is pressed firmly onto the corresponding beams. The reaction forces shown illustrate these effects.

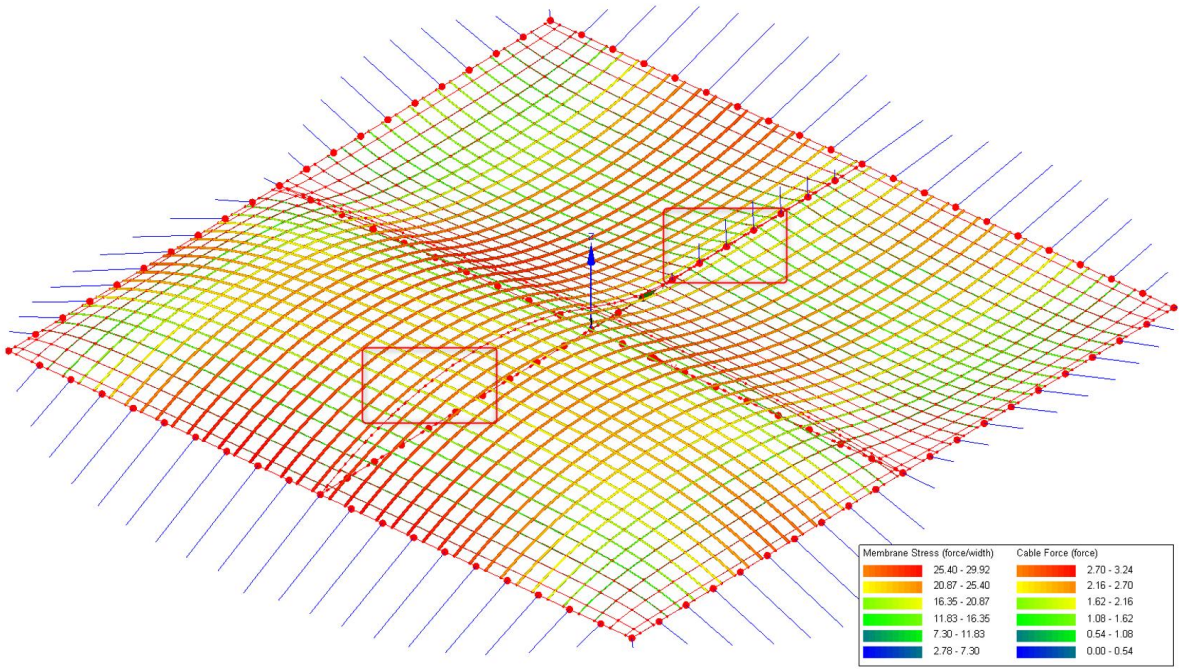

Figure 23: Free movement of the membrane.

1.2 Conclusion

The open and consistently constructive atmosphere of the day provided the ideal setting for gaining valuable insights for the future development of Easy and jointly outlining the next milestones.

We would like to express our heartfelt thanks to all participants for the inspiring exchange and lively discussions. We are already looking forward to continuing this dialogue at the next Easy Power User Meeting!

Stuttgart, February 2026 – Juergen Holl, technet GmbH