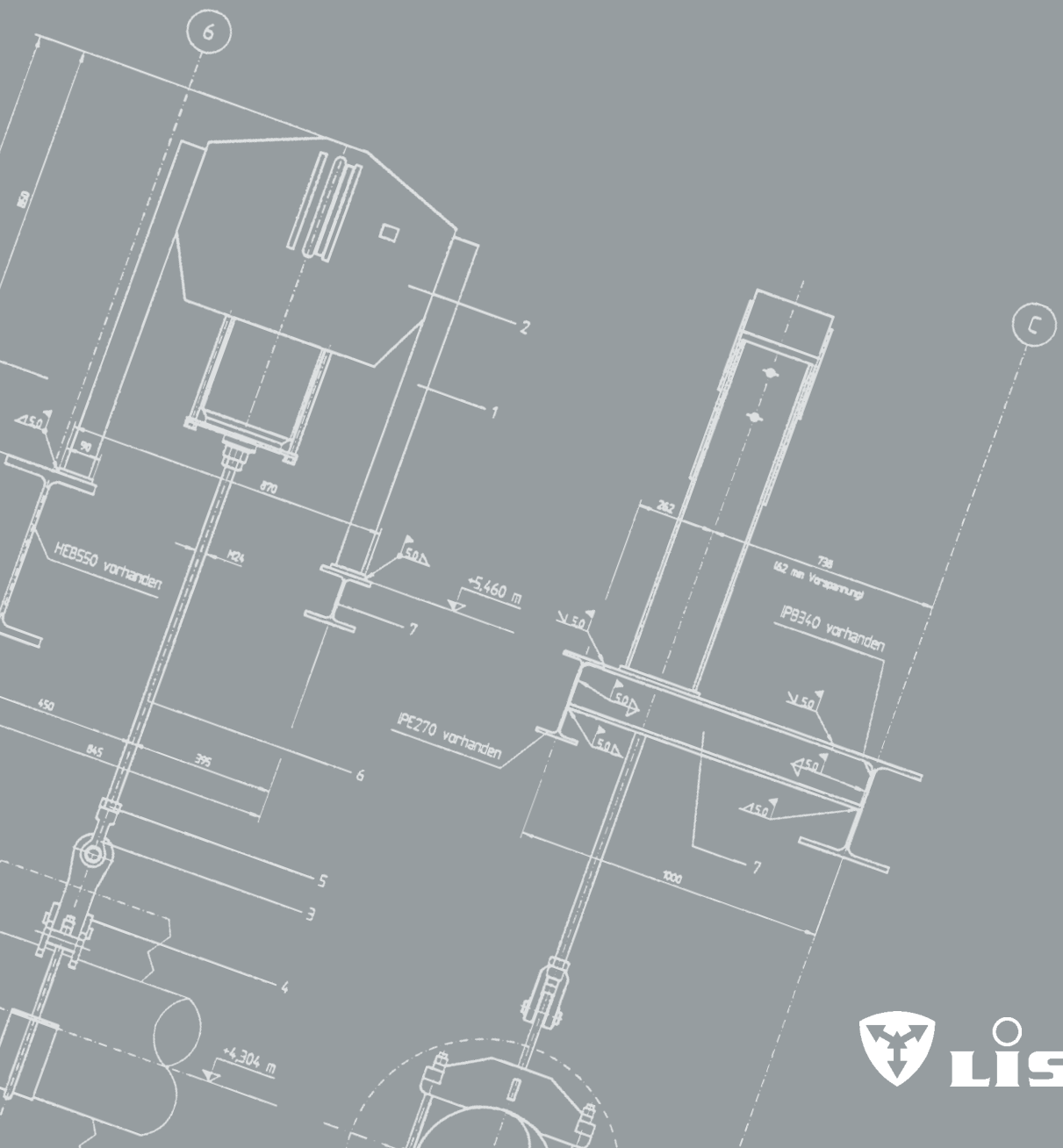
LISEGA Software Tools for Planning and Design

8

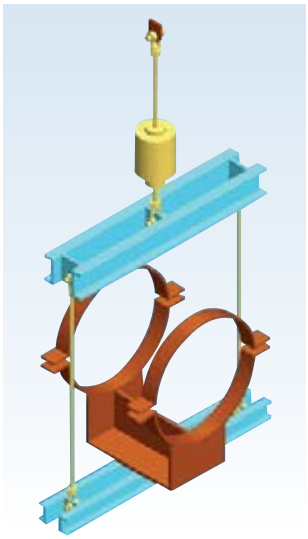
LISEGA SOFTWARE TOOLS FOR PLANNING AND DESIGN

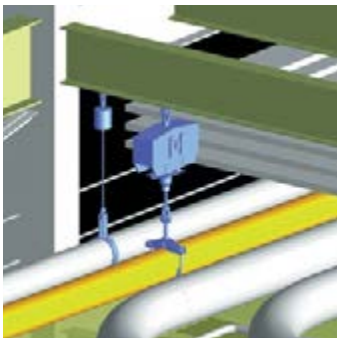
LICAD®

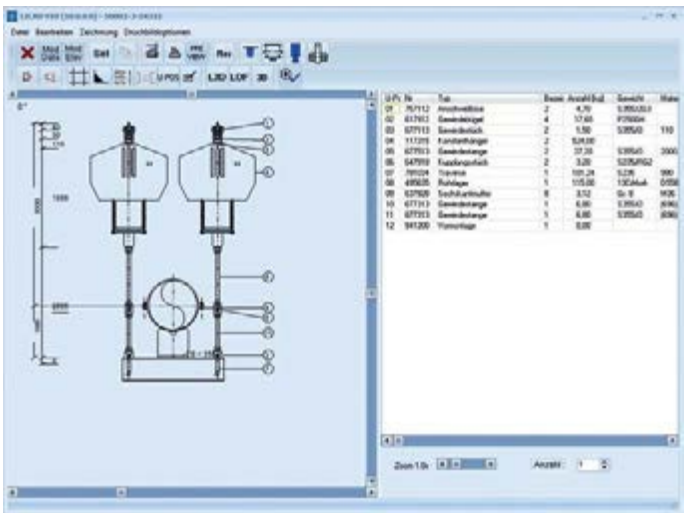


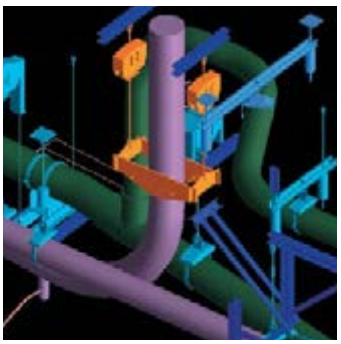
PRODUCT GROUP 8

LISEGA









LICAD®

LISEGA Software Tools for Planning and Design

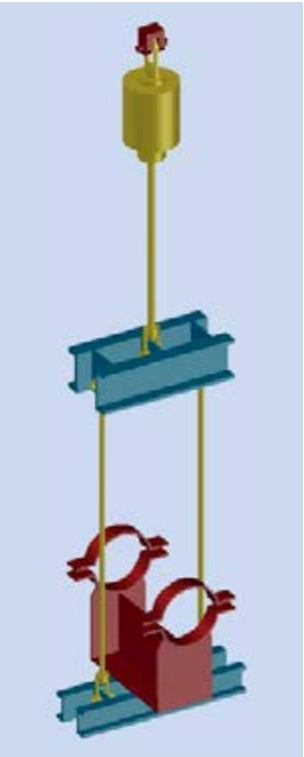
Contents **Page**

LISEGA Software Tools for Planning and Design 8.1

LICAD® planning software 8.2

Interfaces and component libraries 8.5

LISEGA Software Tools for Planning and Design



The intelligent solution for support design

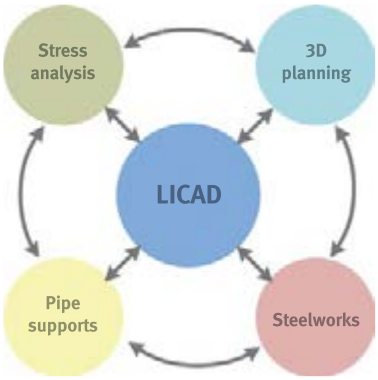
LISEGA's unique modular system was the prerequisite for the creation of highly sophisticated user software. The solutions we offer open up new opportunities for increased efficiency in design, optimized quality and significant savings in project man-hours.

In general, the model design of plants is carried out with CAD, including CAE systems. Through the integration of LICAD® into different CAD systems, the benefits for the efficient layout of piping systems have been vastly improved.

The LICAD® program has set new standards in this field. It enables the creation of support drawings and lists of materials in minutes instead of hours. LICAD® is an intelligent front-end program that supplies the necessary interface data from only one source for all CAD programs currently in use.

From the point of view of quality this single-source function is particularly important.

To provide the LICAD® user with the widest possible range of applications, LISEGA has developed supplementary user software. The whole package covers:

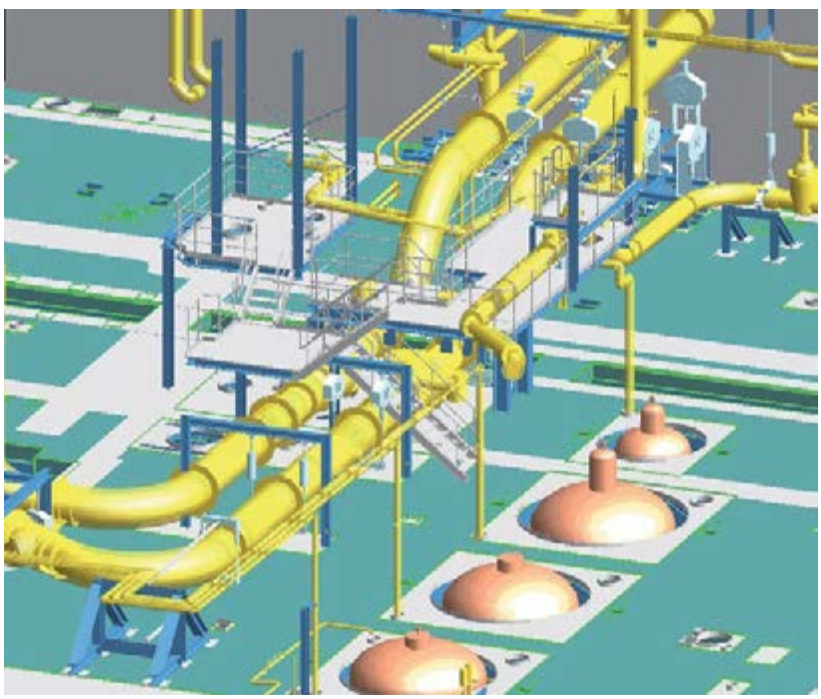


Planning of a plant

- **LICAD® planning and design program for pipe supports**
- **Interfaces for import and export of tables and databases**
- **Interfaces with 3D-CAD component packages**
- **2D / 3D libraries for different CAD programs**
- **Internet communication system for downloading the latest program versions and information on projects, including drawings and orders**
- **Interface to stress analysis and steelwork software**

LICAD®

LICAD® is a registered trademark of LISEGA SE. All other products, fonts and company names are trade names or registered trade descriptions of the respective companies.



Support configurations can be integrated via the export function into complex 3D views.

Planning software LICAD®

Software with profit effect

Needed first – designed last

As a rule the project planning of complex pipe systems runs through numerous phases of optimization. The design of pipe supports inevitably takes place at the end of the whole process and so their deployment frequently comes far too late. **Although the supports are needed on site beforehand for optimum installation of the pipe systems, they lie right at the end of the planning chain** - all the more important to avoid unnecessary delay. The time factor is now crucial.

LICAD® speeds up the planning process

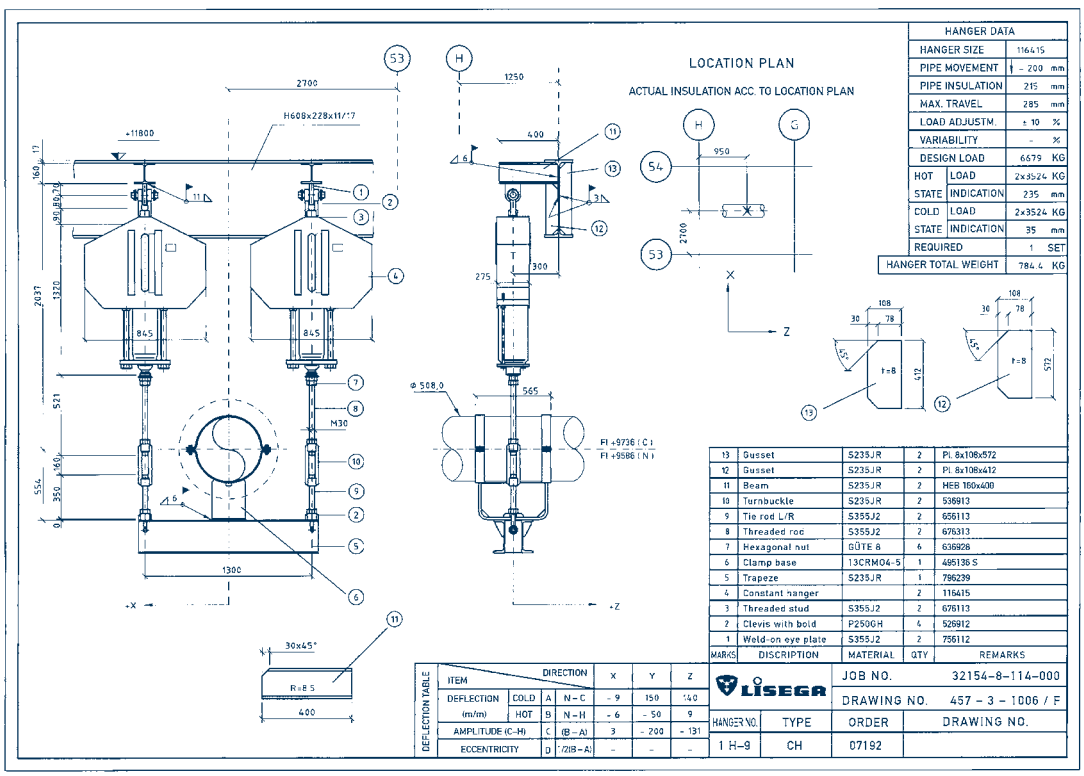
LICAD®, the LISEGA design program for pipe supports, sets the highest standards in efficiency. With LICAD the laborious poring over catalogs and the paintaking preparation of lists of material are a things of the past. Support designs and load chains no longer need to be manually configured and then drawn up at great expense and effort. What would otherwise take hours to produce can be done by computer in minutes – at the click of a mouse!

Future-orientated logistics

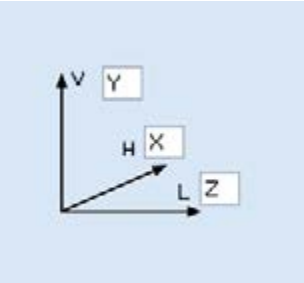
With LICAD®, great savings in time are possible in the logistics process, from planning right through to delivery. For example, the LICAD® data can if required be transmitted directly for processing on the same day by e-mail as a computerized order list. This fits in perfectly with ever-tighter order deadlines.

The downloading and use of LICAD® is free of charge.

In the current version the following languages are available for menu navigation and print editions: Chinese, German, English, French, Italian, Japanese, Polish, Portuguese, Russian, Spanish and Hungarian



AutoCAD® drawing, generated on the basis of a LICAD® design



Free determination of axes

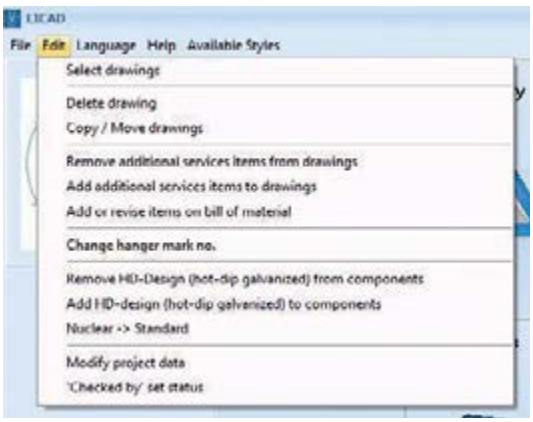
LICAD® is simple to use

The relevant data for industrial support points is entered using menu-driven program control. Only 6 parameters are needed to find the optimum solution.

- **pipe diameter**
- **temperature of medium**
- **operating load**
- **displacement**
- **installation height**
- **support configuration**

From this input, the appropriate load chains are automatically generated. The selection of optimum spring and constant hangers thereby follows automatically, whereby the specific customer requirements such as, for example, travel and load reserves according to **ASME B 31.1, VGB-R 510 L, DIN EN 13480** or other optimum parameters are taken into account. This is ensured by the corresponding entries in the options menu.

Taking this information into account, LICAD's programmed algorithm chooses the most economical solution from all those possible.



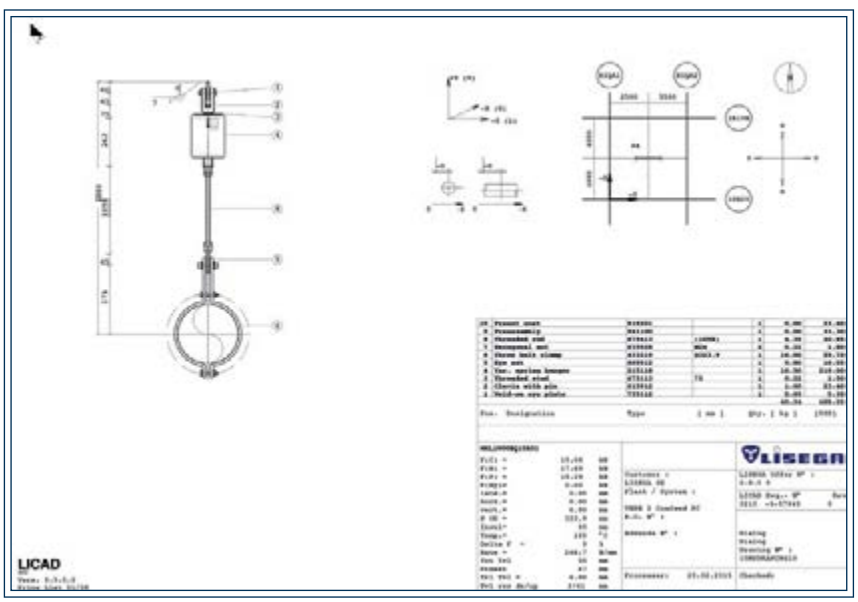
Further options for editing of drawings

True-to-scale drawings

The support chains created are automatically saved as complete assemblies and can be printed out as drawings or modified at any time. They are true to scale and contain all relevant details, including parts lists with weights and materials and optionally with location plan or other freely editable information.

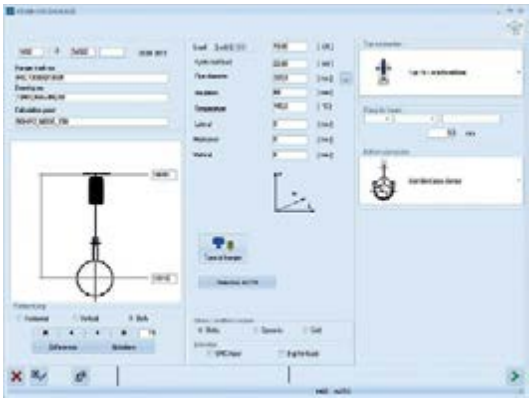
LISEGA modular system forms the basis

The basis of the program is a database system in which the whole LISEGA standard product program is stored as a modular system of absolute function-ality. From more than 12,000 standard components, all fully compatible regarding loads and connections, more than 100 standard configurations cover practically all normal installation situations.

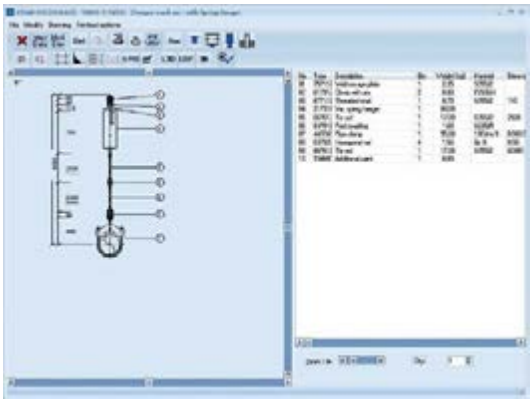


LICAD® drawing generated by a standard printer

All essential functions at a glance



Clearly arranged queries on the essential data for the support in question



Support design with detailed parts list

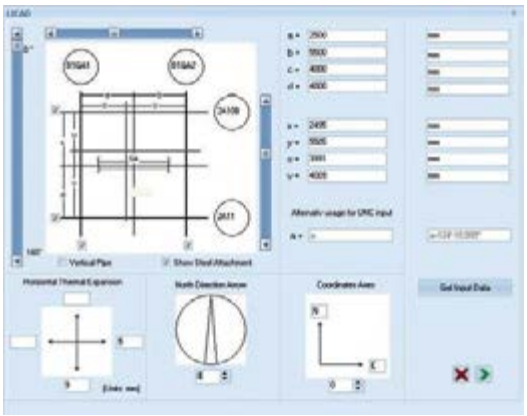
Auxiliary designs for steelwork

LICAD® generates ready-to-install load chains from standard supports, from structural attachment to pipe-surrounding component. More or less complex auxiliary designs are necessary for connection to the existing structures (secondary steelwork).

Through its special interface the LICAD® designs can be exported into a separate CAD program (e.g. AutoCAD®, MicroStation®) and supplemented as required.

Interference checks

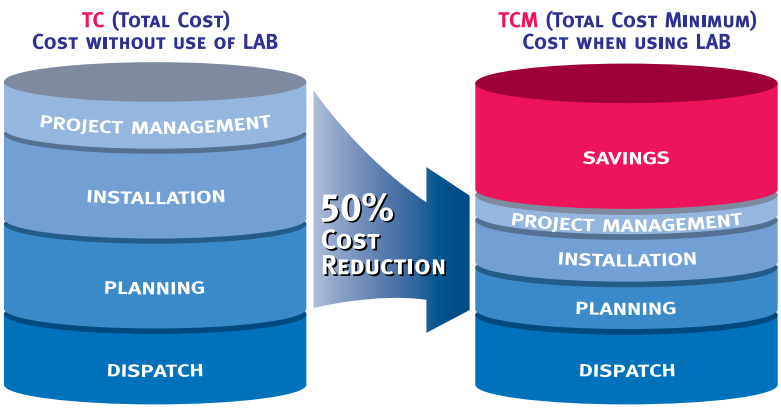
For larger plant projects the design of the building structure, including steelwork, main components and connecting piping system, is carried out via 3D CAD programs such as **Smart™ 3D (Intergraph), PlantSpace (Bentley Systems), Plant 3D (AutoDESK) or PDMS™ (AVEVA)**. Planning continuity, as well as the need to consider possible interference, make it necessary to fully include the pipe supports.



Location plan with axis descriptions and dimensioning

LICAD® saves up to 50% of planning costs

LICAD® runs smoothly on any modern PC with Windows and is easy to use. Due to its particular effectiveness LICAD® has long been an indispensable tool in support planning for countless engineering offices. Potential savings in costs of **up to 50%** simply cannot be ignored!



Possible savings in costs through LISEGA Application Benefits (LAB)

Interfaces and Component Libraries

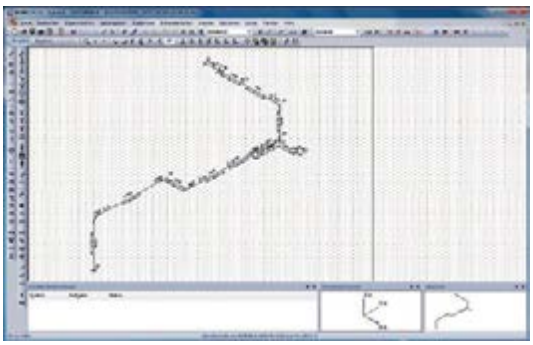
LICAD® contains a wide range of interfaces and component libraries for well-known CAE, CAD and steelwork programs.

This benefits resources and makes for significant savings in time when designing pipe systems!

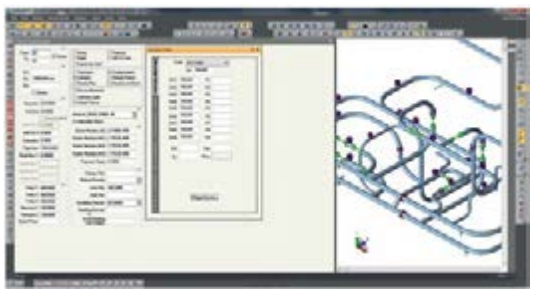
Interfaces and CAE systems

A broad spectrum of interfaces enable the import and export of data already entered from and to CAD and CAE systems.

This basis of the selection of a support chain is formed by the design data from the pipe calculations of the pipe system. One of the CAE systems is the ROHR2® program system (Sigma Co.), which is used for the static and dynamic analysis of complex piping systems and common skeletal structures.



Pipe stress analysis with ROHR2®

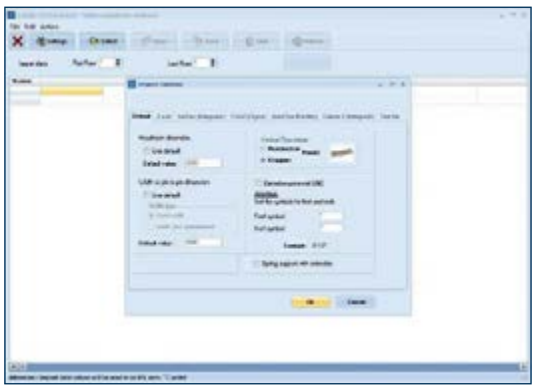


Pipe stress analysis with CAESAR II®

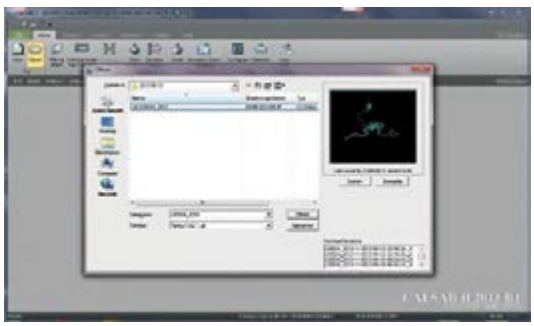
Data from AutoPIPE® (Bentley systems) or CAESAR II® (Intergraph Co.) can continue to be included and used in the selection of the appropriate supports. The data gained from the CAE systems can be sent directly to CAD programs after generation of the supports.

This procedure enables a considerable increase in efficiency and savings in time when designing complex pipe systems.

The interfaces to the CAE systems mentioned above are part of the basic LICAD® package. Optional interfaces for downloading can be found on the LISEGA homepage.



Import of design data



Export of design data from CAESAR II® for LICAD®

Interfaces to CAD programs

Via defined interfaces the LICAD® support designs can be transmitted true to scale and without any further efforts to the known CAD programs. LICAD® supports the export formats DXF, LOF, L3D and ITM. The data are used for the transmission of graphic information and design data. The relevant additional applications are available in the CAD systems for the import of these data.

Pipe systems in AutoPIPE®

AutoPipe® hanger filter

Export of 2D data

Via a DXF export file the support designs, including dimensioning, can be exported optionally with parts lists, site plans and title block to CAD programs (e.g. AutoCAD® or MicroStation®). This interface is part of the basic LICAD® package. For export, the material list (STL) and design data (TEC) files are additionally generated; they can be used for further evaluations.

Export to 3D CAD programs

On the basis of component libraries the drawings prepared in LICAD® can be transformed into 3D drawings via add-ons in various CAD programs. This is possible for:

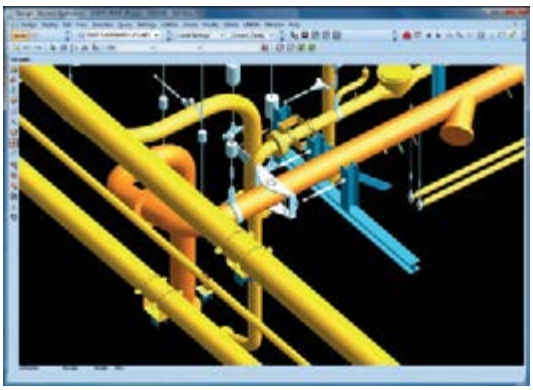
- **AutoCAD®, Autodesk**
- **AutoCAD® Plant 3D, Autodesk**
- **MicroStation®, Bentley Systems**
- **SmartPlant® 3D /Smart™ 3D, Intergraph®**
- **PDS®, Intergraph®**
- **SUPPORT MODELER®, Intergraph®**

For the above mentioned programs the corresponding modules are to be uploaded and installed.

For the **PDMS™** and **AVEVA** software no add-on is registered. A menu extension is available by which data can be conventionally imported and exported.

LICAD® plug-ins

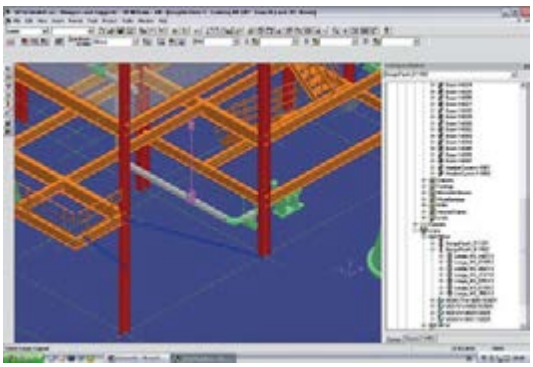
LICAD® plug-ins for different systems are also available. These are used in cases where supports are to be designed interactively in a 3D model. The advantage of a plug-in is that the geometric data of the connection points for the support, as well as pipe diameters, height notations and, if required, the design data are exported directly to the program. There is no longer any need to take measurements in the model. The support chain is automatically displayed in the 3D model.



Model in PDMS™ after data import from LICAD®

The attributes of the material lists are also imported, depending on the system.

Important: In order for the plug-ins to function, LICAD® must be installed at the respective work station.



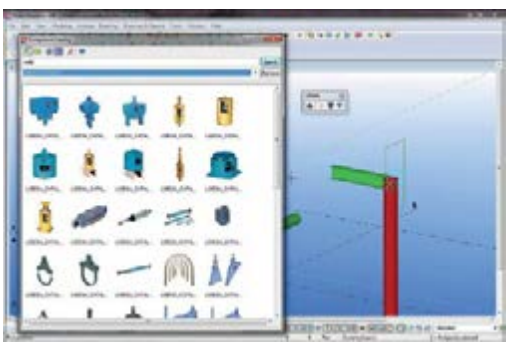
LISEGA standard supports in SmartPlant® 3D

LISEGA supports in CADWorx®

Component Libraries

For further designing in the 2D and 3D modes, comprehensive LISEGA component libraries are available, amongst other things, for the following CAD programs:

- **AutoCAD®, Autodesk**
- **AutoCAD® Plant 3D, Autodesk**
- **MicroStation®, Bentley Systems**
- **SmartPlant® 3D / Smart™ 3D, Intergraph®**
- **PDS®, Intergraph®**
- **PDMS™, AVEVA™**
- **SUPPORT MODELER®, Intergraph®**
- **TEKLA Structures, TEKLA®**

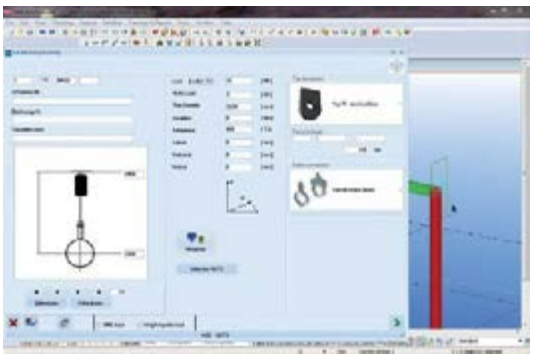


LISEGA company library in TEKLA®

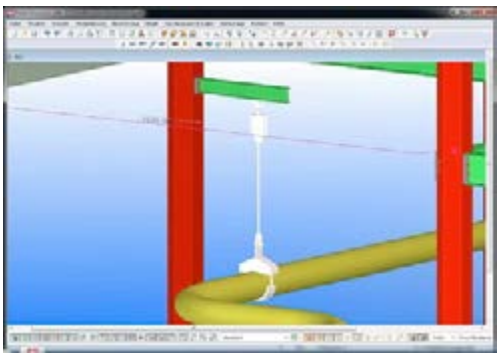
Interface to steelwork programs

Through LICAD®, the most suitable standard support configurations for each case are determined and from this the corresponding load chains, including all individual parts, are specified.

In plant construction, standard supports are the connecting links between pipe systems and steelwork. In ideal cases they can be directly connected to the existing plant structure, but often a further step is necessary, that is, the use of additional steelwork components as connecting elements (secondary steel). It therefore makes sense to be able to display standard supports in steelwork programs. For this, LICAD® provides interfaces to steelwork programs (e.g. TEKLA Structures software). By means of the plug-in function, LICAD® is integrated into the steelwork program and supports can be directly planned in accordance with the requirements of the model.



LICAD® plug-in for TEKLA Structures



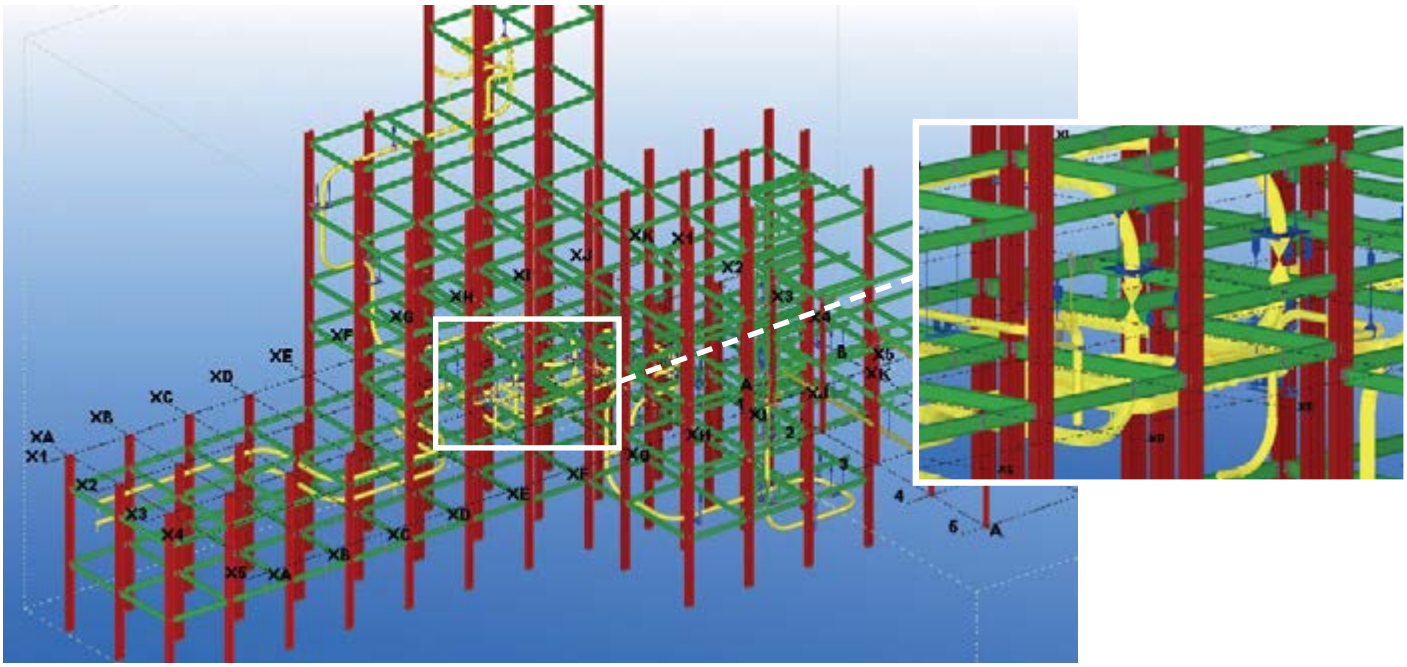
Interactively designed support in TEKLA Structures

TEKLA
A TRIMBLE COMPANY

Simple modeling and rapid alteration of 3D models

This, together with all other plan components in the model, enables the execution of an interface check, which is necessary when planning complex plants.

With the development of the steelwork interface LISEGA supplies a tool that can reduce the enormous investment in time and so optimize the quality of the planning process.



Primary steelwork and pipe systems with supports as reference in TEKLA®

LICAD® updates

LICAD® and other software packages are being constantly updated and expanded. The applicable program version and interfaces in each case can be found on the LISEGA homepage for downloading.

The necessary license numbers are thereby forwarded automatically by e-mail to the recipient. Further license numbers can be obtained by telephone.

The use of LICAD® software is free of charge.