

TECE



TECE SYSTEM CONSTRUCTION

TECEsystem installation walls

Installation walls

close to you



" Money can only be earned in construction with smoothly handled projects. "



30 YEARS OF TECE SYSTEM CONSTRUCTION

To increase productivity in the construction industry, we will have to work much more systematically in future. TECE can draw on over 30 years' experience with prefabricated sanitary walls and shafts. But TECE system construction is much more than a ready-to-install wall section. In addition to the product itself there is also a proprietary quality process, comprehensive service, commitment to norms, research & development as well as reliable guarantees.



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TECE System Construction

ADDED PRODUCTIVITY

Well planned, efficient and smooth.

Learning from the automotive industry. With prefabricated assemblies.

High-efficiency production processes only work if everything runs perfectly smoothly and at the right time. The automotive industry is certainly a role model for many other sectors. After all, the production of vehicles is no longer just about "time is money". It's far more a case of "in time is money". The advantage of high productivity comes at the cost of greater susceptibility to faults. But this can be avoided with excellent production planning.

What works in the automotive industry cannot be realised in the construction sector? The construction industry cannot be compared with the mass production of a car factory; after all, every building is unique. And yet everything in construction connects to everything else and makes processes susceptible to failure. The solution for certain areas of construction is therefore reminiscent of the automotive industry: excellent planning and the prefabrication of assemblies!



... AND EVERYTHING DEVELOPS DIFFERENTLY

Picture a car manufacturer, where every dashboard on the conveyor belt is compiled from individual parts: how often would the belt stop, how consistently high would the quality be, how often would one of the components be missing? Unthinkable. Yet that is exactly how construction works.



" Despite a dramatic shortage of skilled labour, productivity in the construction industry is extremely low! "

" Show me the construction project where the stakeholders generate the profits they calculated at the very start. "

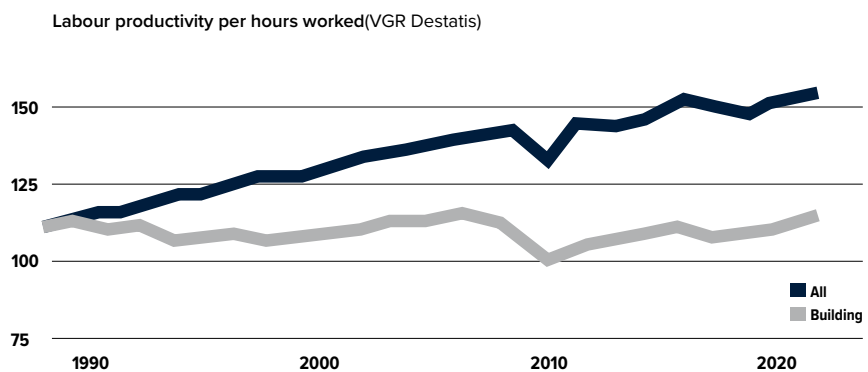


Missing coordination in the construction process

Investors and architects, designers and fitters: They can all tell you a thing or two about how many construction sites are in a sorry state. New build and renovation projects are repeatedly subject to shortcomings, there is a lack of readiness to cooperate from factories and specialists, insufficient preparation, coordination and documentation. The result: construction delays. With all of the ensuing consequences.

Avoid delays with TECE system construction

With its prefabricated products, services and quality process, TECE ensures that the MEP installation doesn't result in delays to construction. So no more time is required than originally planned. Everything is delivered just-in-time. Delays due to defect rectification are virtually non-existent with TECE solutions. After all, the complete delivery and simple assembly of the prefabricated sanitary walls avoids additional coordination work.



This chart illustrates how labour productivity per hours worked has changed in Germany over the past three decades. While it has risen continuously overall, the "construction" curve has stagnated at a relatively constant level since the 1990s.

AN ALL-INCLUSIVE PACKAGE THAT SOLVES PROBLEMS.

We know that you would love to avoid delays in construction, poor returns, processing defects and disgruntled customers. TECESystem helps you with this. Because it is more than a good product concept, it offers more than strong service.

Products and service in one package on your construction site. Added value for you.

Technology in the package

- Piping system
 - Potable water
 - Heating
 - Ventilation
 - Waste water
 - Cold
 - Rain water
- Sanitary technology
 - Toilet modules
 - Washstand modules
 - Shower drains
 - Fresh water stations
- Supporting framework
- Stop valves and water meters
- Fan boxes
- Underfloor heating
- Fire protection
- Sound insulation



TECEsystem – more than simply the sum of its parts

With TECEsystem installation walls you can finally avoid nasty surprises during construction.

Industrial prefabrication with TECEsystem gives you maximum planning security: Deadlines are fixed in from the start, fewer trades conflict with one another than normal and the risk of construction delays is minimised. A proprietary quality process guides you from the planning and logistics through construction support to the after-sales service.

The quick and easy installation of systems reduces assembly costs. Staffing bottlenecks due to a lack of skilled labour are non-existent. Since we prefabricate everything in our own factory, we guarantee a quality standard that exceeds that of standard construction site assembly. Everything is optimally coordinated. Building law requirements for sound insulation and fire protection are naturally fulfilled.



Service in the package

- Design
- Planning
- Logistics
- Training
- Construction support
- Auditing
- After-sales service

Added value in the package

- Costing reliability for materials and time
- Cost transparency
- Significant time savings
- Legal and standards security
- Reduced potential for errors
- Consistent high quality
- Simple procurement and logistics
- Just-in-time delivery
- No coordination of trades
- One contact partner

Our package – Added value for you

MEP INSTALLATIONS – SO SIMPLE IN PRACTICE.

Position, attach, connect: done! Everything considered, installed quickly and standard-compliance, safely on schedule and on budget. That's how easy it can be.



" Finally, an MEP installation where you don't have to spend lots of time looking for individual parts. "



Controlled prefabrication

The finished TECEsystem installation walls usually contain the entire pipework for all media as well as shut-off devices, water meters and fan boxes as well as the sound-proofing elements and the formwork for the professional ceiling closure. With this controlled industrial prefabrication we also significantly reduce the risk of making mistakes at the construction site.



TECEsystem installation wall as a pre-wall in front of a solid or dry wall

Whether as a half-height sanitary wall with toilet and washstand module or with a shaft, as a room-height pre-wall or in a T-shape for room division: TECEsystem offers a range of possibilities. The degree of prefabrication ranges from unpiped supporting framework with sanitary modules to a fully equipped system wall with all pipes, insulation, fresh water station or underfloor heating manifold.

TECEsystem Pro room partition wall in drywall construction

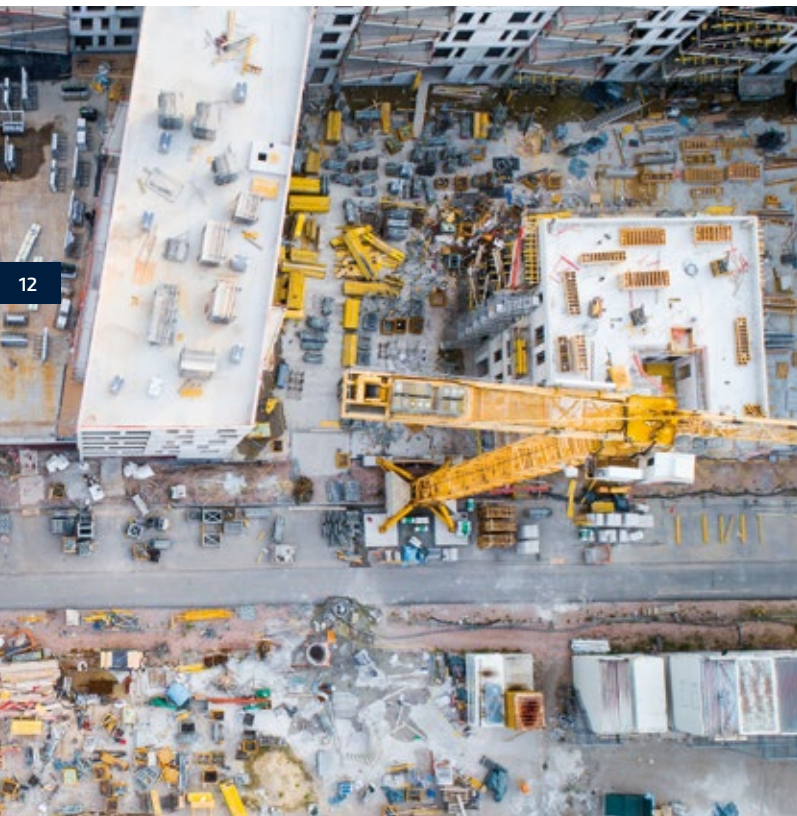
Space gain: installation walls as room dividers are generally installed between two bathrooms. The technique for both bathrooms as well as the rising pipes are installed in this partition wall. The big advantage is that you can save between 10 and 15 cm of construction space per bathroom. Depending on the number of bathrooms, you can even end up with an additional bedroom in a hotel. Room dividing walls must naturally comply with sound insulation and fire protection requirements. In order to be able to assume responsibility with tested components here, we offer this version of the installation wall solely as a factory-piped version in combination with blown-in insulation.



SYSTEMATICALLY AVOID ECONOMIC RISKS.

Risk: construction faults

An example from real life: A box containing 100 sound decouplers for the waste water installation has been sitting in the material container for weeks. The walls in the bathrooms have long since been panelled. Apparently, the wastewater downpipes were only fixed with standard pipe clamps. The contractually owed sound insulation requirements could not be fulfilled. The disputes and costs this could result in are foreseeable. These and similar construction defects are part of everyday life. With the industrial prefabrication of TECESystem you can avoid these types of construction faults. We check all assemblies in the factory before delivery, thereby ensuring consistently high quality.



Risk: Delays

You avoid the risk of delays with TECESystem due to the high degree of prefabrication. This results in significantly less work on site. Costs can be planned better and estimated more accurately. This also does away with the constant management and procurement of a large number of individual parts on the construction site. There are no such delivery delays and resulting downtimes with TECESystem.

Risk: Additional costs

Better adherence to scheduling and fewer construction faults automatically reduce the risk of additional costs. Possible downtimes, supplements due to obstructions, rework, penalties for delay or even legal disputes are rare in system construction. In addition, TECESystem offers you a high level of transparency for material and labour costs and therefore lays the foundation for a reliable calculation. Customers who have been with us for years know: prefabricated sanitary walls are a stress-free way to earn money, because it just works!

Risk: skilled labour shortage

According to a labour market study by DIHK on the biggest business risks, in 2018 a shortage of skilled labour was identified as the greatest risk by quite a margin. A shortage of skilled labour has long been the limiting factor particularly in the construction industry and in craftsmanship. You avoid this risk when you use prefabricated assemblies. And ensure more added value in less time.

AND WHAT DOES IT COST?

"In the tender phase, clients understandably always want the cheapest solution. However, when using industrially prefabricated installation walls, our customers are not primarily interested in finding the cheapest offer. What really counts is offering the most genuinely economical solution after fabrication. Reliable costing. By minimising and excluding risks. And this is where TECESystem is generally well ahead of conventional solutions. On time, fault-free and within the planned cost framework.

Regarding costs:

The industrial prefabrication of TECESystem can be marginally more expensive in the tendering phase, but it can also be cheaper. This depends on many factors:

- The larger the construction project and the more similar the installation walls, the more advantageous industrial manufacturing is.
- The more extensive the fitting level of the Installation walls, the more technology is built in, the more advantageous TECESystem is.
- The more extensive the construction site, the more advantageous TECESystem is because, for example, a lot of travelling time is saved when transporting components from bathroom to bathroom.

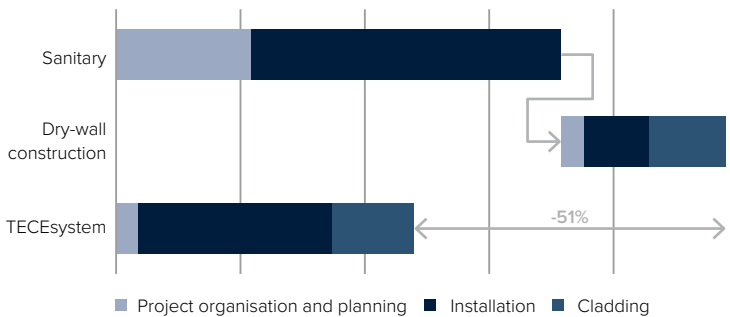
This is why in the tendering phase TECESystem can be either marginally more expensive or even significantly cheaper. Interior construction with industrially prefabricated installation walls is significantly faster in any case. Our regular customers normally calculate 30% less time lost. And that is without the typical construction risks, reliable and stress-free."



Stefan Schaefer, Project Sales Manager

Comparison between industrially prefabricated installation walls from TECESystem and conventional construction methods for a small refurbishment project.

System comparison



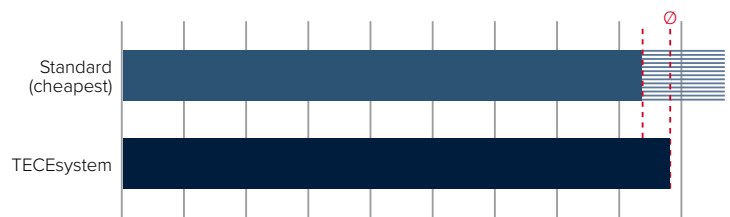
Sanitary time saving:

-84% planning and project organisation, -38% assembly, total: -52%

Dry-wall construction time saving:

-42% assembly

Construction period total time saving: -51%



Cost comparison with this example:

- TECESystem to the sum of the respective cheapest bids (sanitary+dry-wall construction) approx. + 6.5%.
- Approximately equal in price to the average Ø of all bids.

Project scope:

- 48 housing units, 3 apartment blocks, each with 2 risers, 4 floors, each with 4 apartments
- Half-height pre-wall with shaft, panelled with plasterboard ready for tiling
- 2 half-height toilet and washstand versions (left/right)
- 4 shaft versions with rising pipes for heating and potable water, waste water, ventilation and fire protection

TECE System Construction

TECE QUALITY PROCESS

Your project: systematic and step by step

" Flawless quality requires more than a good product: a sustainable concept and comprehensive services. "



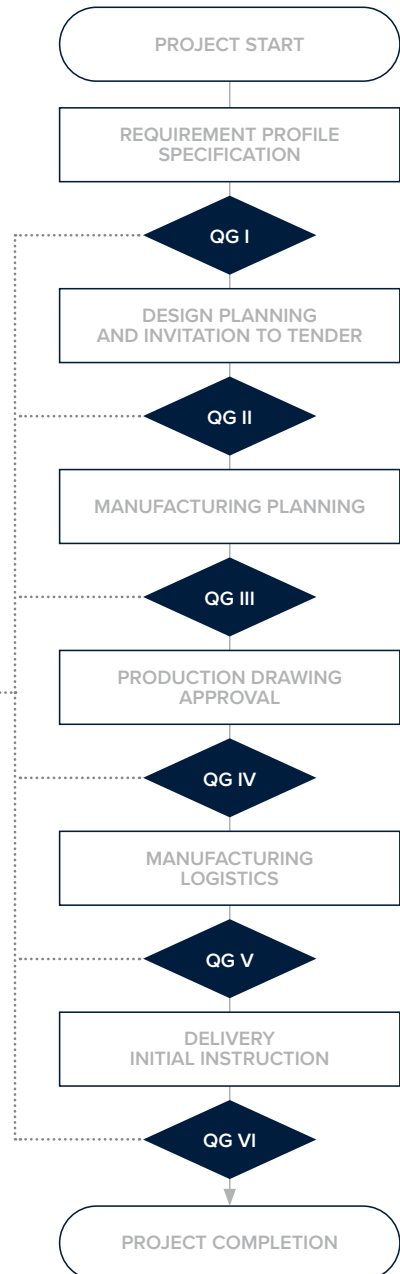
If you want to guarantee your customers high quality and flawless processes, you have to proceed systematically. From initial sounding to installation on site. This is how TECE has developed a comprehensive service package that gives you the security of receiving reliable system solutions .

Together with our customer, we determine the individual requirements for the respective project and then have it realised by the TECE project team. This team oversees the project throughout the entire planning and building phases, participates in construction meetings and plans the building process, including scheduling just-in-time delivery of the wall sections.

As a building client, you can always be sure that specialists are on hand when they are needed.

Quality gates

Each project phase ends with a "quality gate". This is a list of requirements which we use to ensure that every process step has been carried out correctly. This means we can largely eliminate faults and cost increases over the course of the project. This increases accuracy in costing, in the schedule and in the quality of the work.



ONE HOUR OF PLANNING SAVES TEN ON THE CONSTRUCTION SITE.

1: Creation of a requirement profile

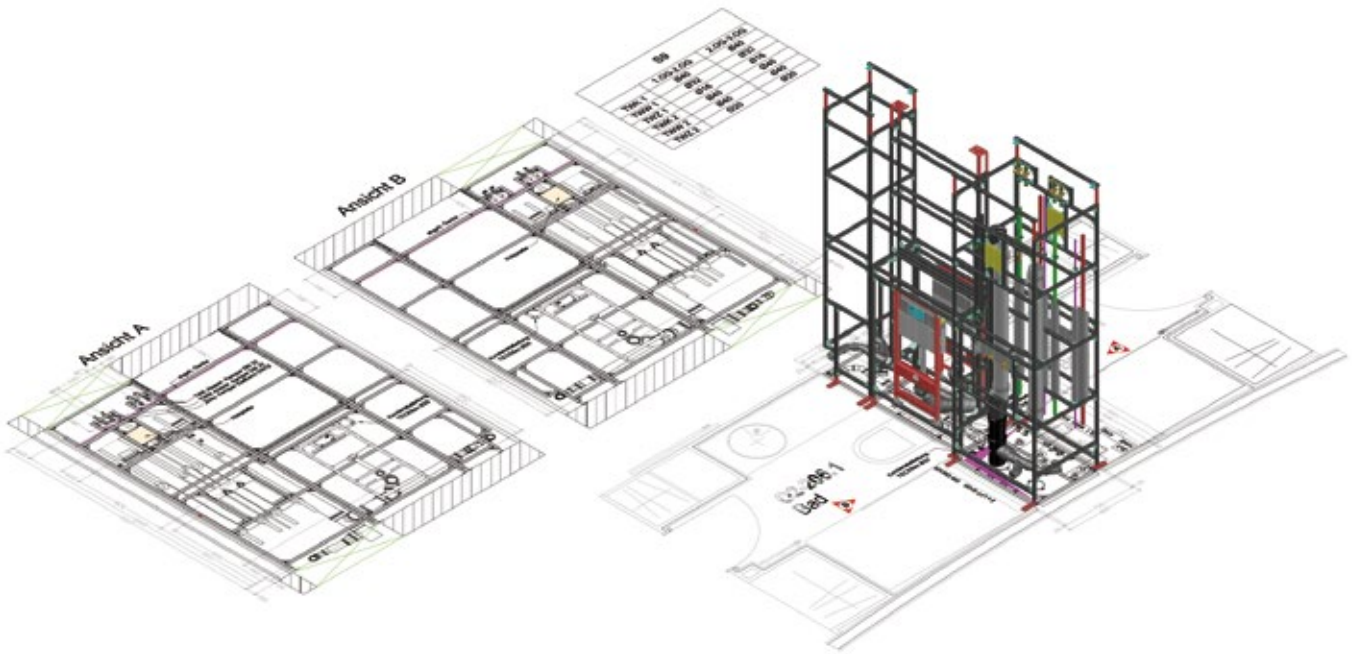
The project begins! TECE project management holds an initial consultation with the client to establish all relevant requirements for the construction project team using an extensive checklist. TECE application engineers, planners, general contractors and/or architects sit together at the table. The goal: to describe all requirements in detail in order to minimise as much as possible the need for changes later on in the project. This means we stay on budget and on schedule until the project ends.

QG I



CHECKLIST Q GATE I

- Sound insulation requirements
 - DIN 4109
 - VDI 4100
- Fire protection requirements
- Barrier freedom DIN 18040
- Piping system
 - Material and insulation
 - Potable water
 - Heating
 - Cold
 - Ventilation
 - Waste water
 - Rain water
- Shut-off devices
- Meter
- Fan boxes
- Cladding
- Other mounting parts
- Fitting level of the bathrooms



2: Design, planning, invitation to tender

QG II

Based on the requirement profile of the different installation walls and shafts, we develop an individual concept for each construction project in close cooperation with the decision-makers. In special cases, we develop a prototype in this phase which can be used to discuss the final planning details.

CHECKLIST Q GATE II

- Architectural construction documentation
- Building section views
- Bathroom detail planning
- MEP specialist plan
- MEP piping schemes
- Bathroom furnishing information
- Planning documents for special parts
- Other information

17



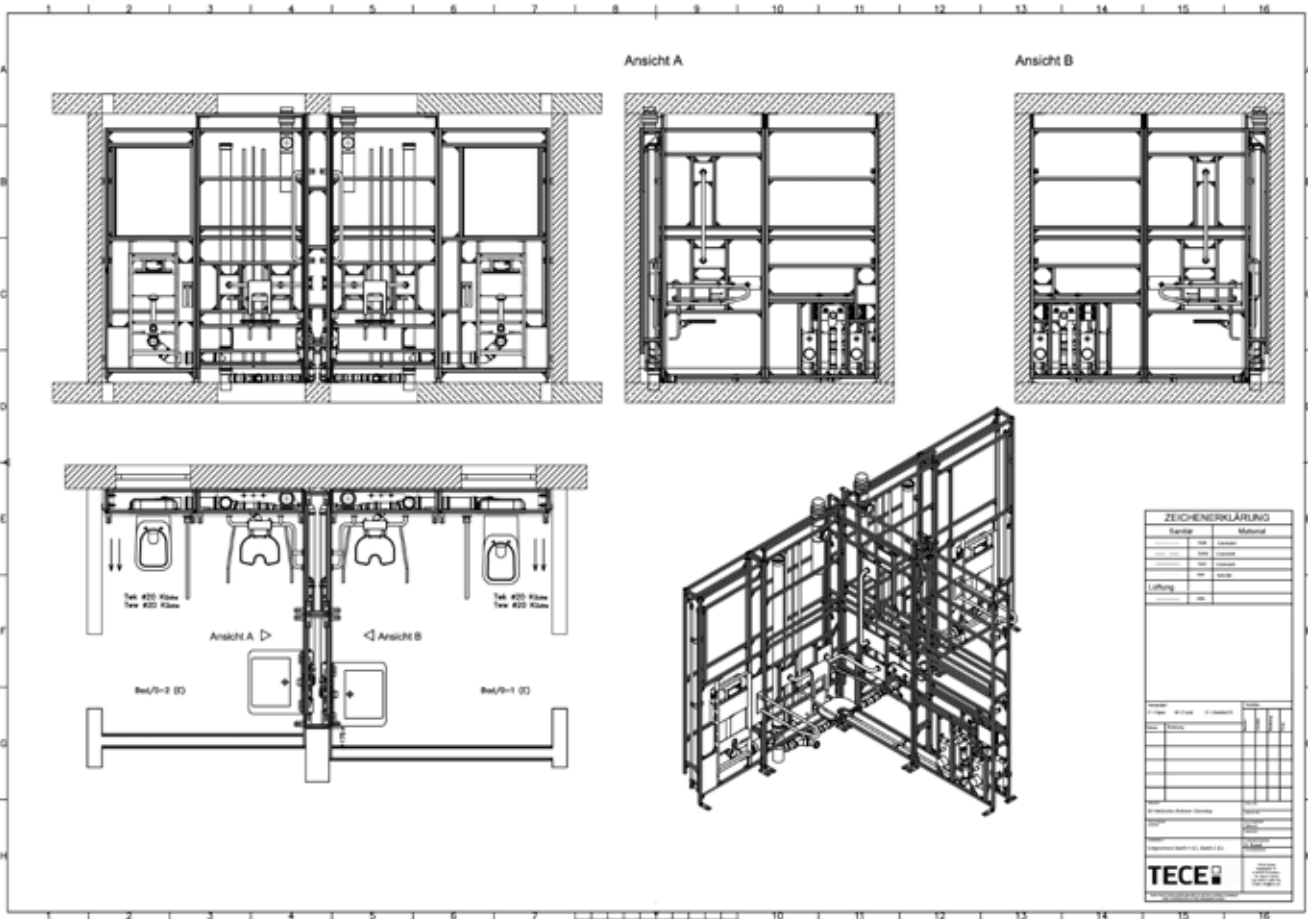


3: Manufacturing planning

QG III

Once the tradesmen have placed their order with TECE for the production of the installation walls, we create the production drawings. Before the final design, our TECE application engineers coordinate the final installation details with the client, check the dimensional accuracy of the corresponding bath geometry on site if necessary and clarify the access to the installation locations with the local site management. In addition, delivery and unloading conditions are already inspected. We then create a detailed production drawing for each TECESystem installation wall with all the fixtures, fittings and pipework dimensions.





4: Drawing approval



A final check and approval of the production drawings is carried out in close co-operation with the company carrying out the work. Always with the aim of identifying errors in good time and excluding the need for changes before assembly and on the construction site.

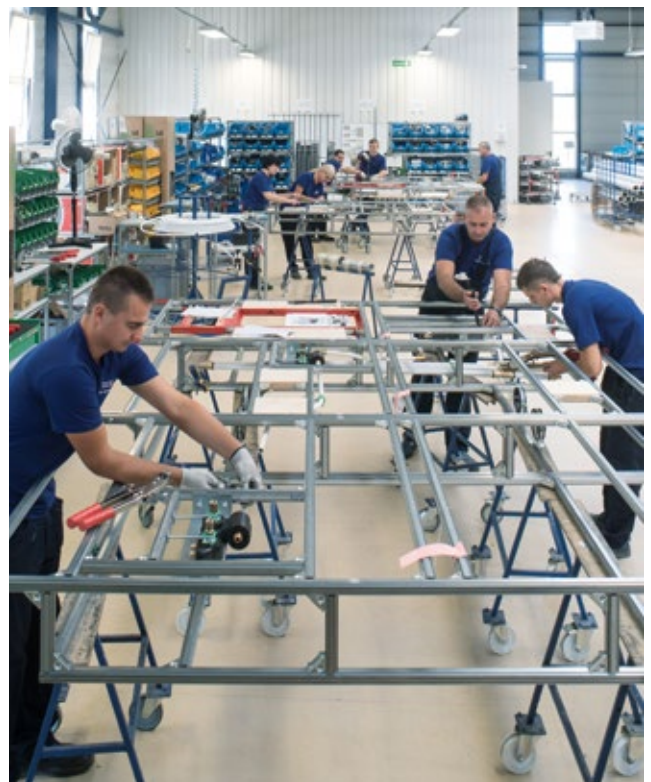




5: Manufacturing and Logistics

Using the coordinated delivery plans as a basis, the industrial prefabrication of the installation walls starts in the TECE production factory. Firstly, the supporting frameworks required for the call-off are created and labelled with a barcode for further identification on the construction site.

The sanitary modules and other mounting parts such as meters, shut-off devices and fresh water stations are then inserted into the supporting framework.





The piping for all media is then installed, sound-insulated and insulated according to requirements. Next, the lost boarding for the ceiling filling compound is adjusted and enclosed.



Before shipment, all assemblies undergo quality inspection and the multi-stage final inspection. In addition to the completeness of all fixtures, pipe connections and insulation, we also check the completeness of the relevant accessories for the installation and connection of the sanitary walls.



The scope of the entire cargo is then checked before the truck leaves the factory for the construction site.

6: Delivery and construction support

We deliver the assemblies at the agreed time. We clarify the journey, parking location and time window in advance. The TECE application engineer discusses the unloading and installation scenario at an early stage to ensure smooth installation of the installation walls. The engineer assists the fitters on site and briefs them on the task. With over thirty years of experience in system construction, our engineer is happy to give one or two tips.





But this won't be the last time a TECE employee is on the construction site. We are also regularly on site as construction progresses in order to coordinate the further delivery schedule and packing sequence of the deliveries with the site management. This allows us to respond as fast as possible and support a smooth and fault-free construction process. Proximity makes all the difference!

The entire process finally ends with the handover of the technical documentation. And satisfied customers.



BUILDING LEGISLATION COMPLIANCE

Meeting standards for potable water, fire protection
and sound insulation.

The moment of truth

Acceptance without defects or necessary rectification? Building acceptance is a deciding moment for all stakeholders. And not just from an economic perspective. Investors are concerned with whether the planned opening date can be met. The companies carrying out the work want to know whether they can issue their invoices without deductions or withholdings.

The most important thing, however, is everything that affects life and limb. This includes potable water hygiene as well as the sound insulation and fire protection.

With TECESystem, you can take a relaxed approach to the building inspection. All requirements have been determined in good time and translated into practical and standardised design concepts. Unpleasant surprises? No chance.



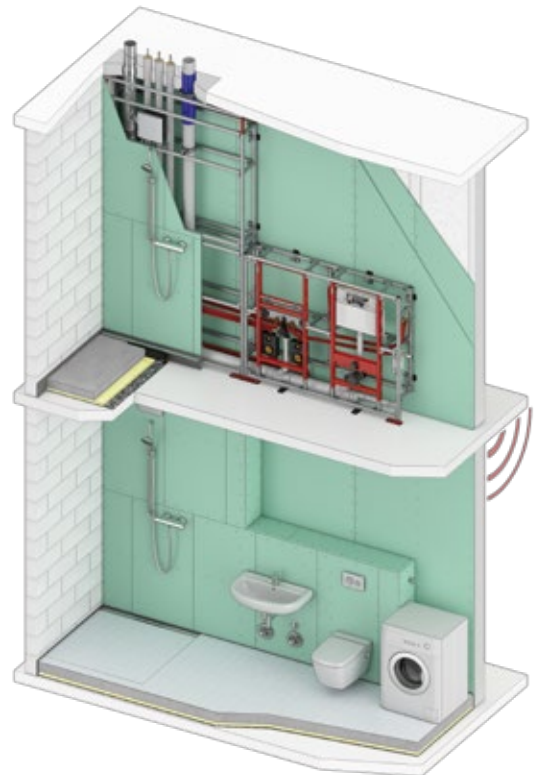
" Contractual obligations must be met. In construction as with everywhere else in life. Construction errors come to light at the latest during the final inspection. "

TRUST IS GOOD, COMPLYING WITH STANDARDS IS BETTER: TECE FIRE PROTECTION AND SOUND INSULATION.

TECEsystem provides you with an open platform, within certain limits, for the realisation of your individual projects. Our core competence here lies in the project-related development and realisation of standardised, prefabricated bathroom units for project and residential construction in the field of new builds and refurbishments.

To ensure that the project can be realised successfully and economically and that you can exploit all the system benefits, TECE should be consulted at an early stage in the approval and implementation planning. A qualified TECE project team is at your disposal and will be happy to accompany you from the preliminary planning to the final acceptance.

At TECE, the focus is always on standard-compliant planning and professional execution, taking into account the building law requirements for fire protection and sound insulation.



Compliant with the requirements of building regulations

We work exclusively with renowned, external testing centres and institutes when it comes to inspecting the conformity and certification of our system solutions in the topic areas of potable water hygiene, structure or sound insulation and fire protection.

All TECEsystem installation walls are comprehensively documented on building acceptance, which simplifies the acceptance process.





Fire protection

TECEsystem only uses fire protection products that are compatible with each other. The TECEprofil supporting framework is suitable under building law by the DIBt for use for types of construction for the erection of non-load-bearing fire protection structures and is accordingly labelled with a Ü marking (Z-19.140-2573). This allows us to meet the current construction law requirement for building fire protection and offer our market partners exclusively acceptance-ready and economic fire protection system solutions. Depending on the construction type required and the special requirements for this, our TECE project team can draw up the most economical fire protection solution for you. If required, we support you with our system and co-operation partners in clarifying complex fire protection issues under building law and accompany you during implementation.



Sound insulation

With TECEsystem, you comply with the building law requirements for sound insulation in accordance with DIN 4109-1 and the increased requirements in accordance with DIN 4109-5. For us, sound insulation is a bundle of many individual measures that only develop their full effect when they work together. We therefore examine each project-specific construction situation in its entirety, combined with careful planning and professional implementation. With a large number of test reports for practical building situations, TECE supports the respective specialist engineers and thus offers the necessary planning security. The test reports are based on system tests carried out in the test laboratories of the accredited Fraunhofer Institute for Building Physics in Stuttgart and are used by our system partners as a basis for verifying the sound insulation requirements under building law as early as the planning and implementation phase.

Potable water hygiene

The high hygiene standard of potable water based on the Potable Water Ordinance means high requirements need to be met in the planning, installation and operation of potable water systems. Using high-quality and coordinated TECEsystem components, TECE meets the applicable standards and provisions for potable water quality. The TECE project team helps with system selection and offers technical planning support.



TECEsystem-Pro Blown-in Insulation Technology

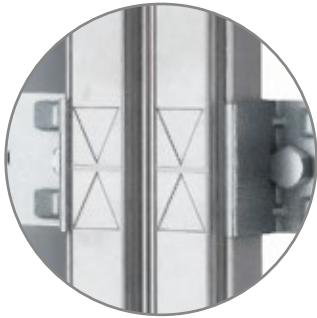
Spanning across trades and interfaces, the TECEsystem-Pro solution with machined blown-in insulation technology combines the requirements of fire protection, sound insulation and drinking water hygiene into a factory prefabricated function component. In this way, we can significantly reduce the risk of construction defects, make it easier to obtain building inspections and optimise the entire construction process for your project. In the best case scenario, we can make room partition walls thinner than usual using blown-in insulation and thereby save construction space.





Lost boarding

The permanent formwork ensures that the ceiling openings are securely filled. This complies with the provisions for sound insulation and fire protection. The telescopic ceiling connection offers 15 cm of assembly clearance.



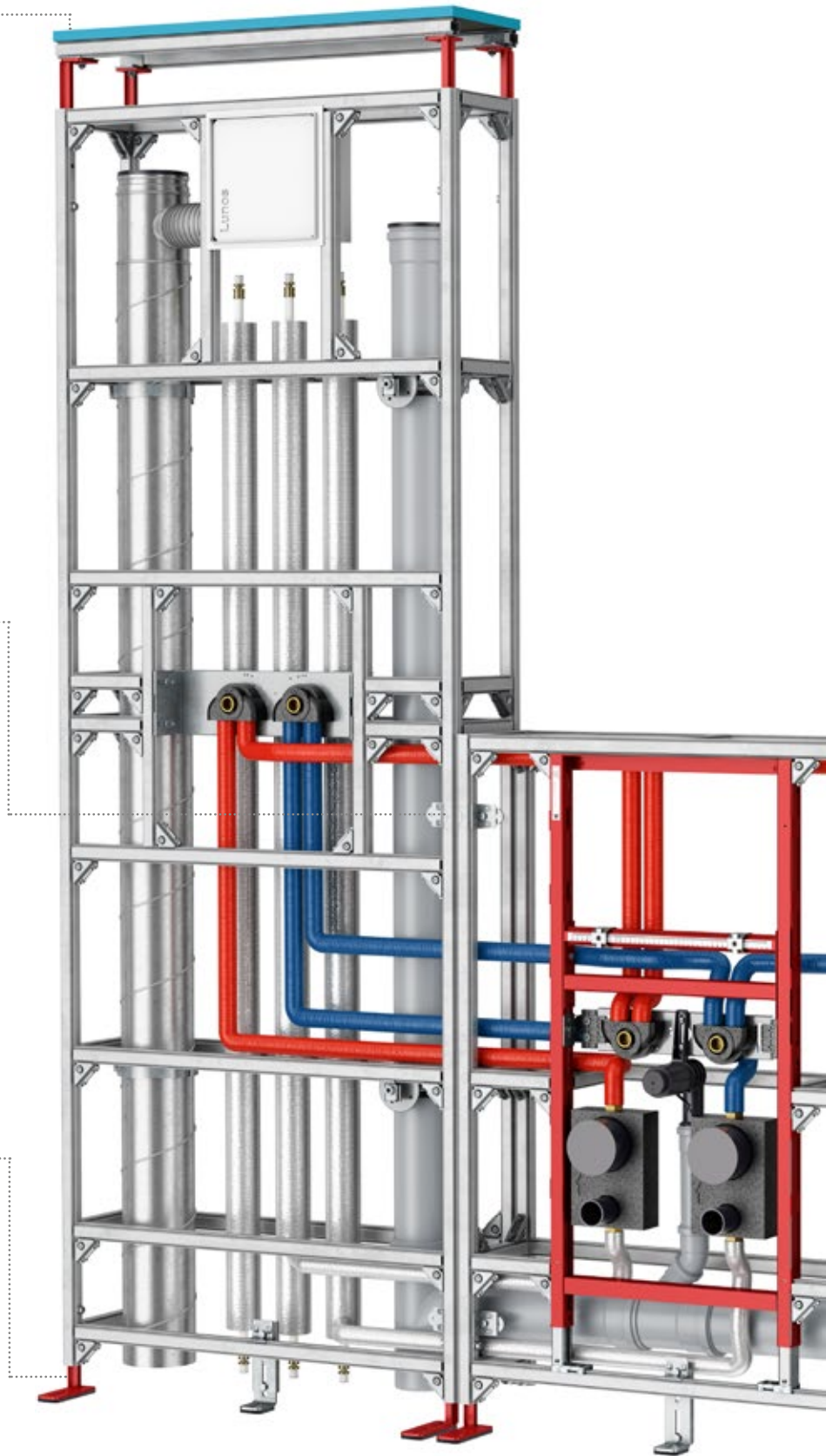
Metre tear

TECESystem installation walls are produced to a metre tear. This means segments can be easily arranged and adjusted at the assembly site.



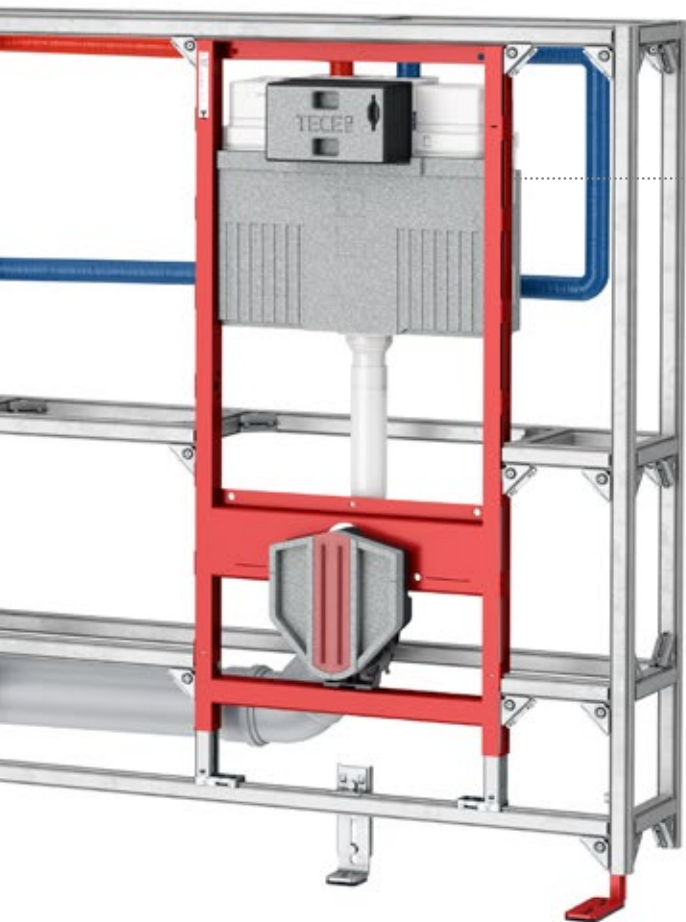
Wall section feet

The prefabricated installation wall can be easily assembled by two people. The sound-decoupled telescopic feet help with the adjustment of structural tolerances and alignment to the metre mark. The feet also provide sufficient assembly freedom for the waste water piping.



YOU CAN TELL IF A SYSTEM IS WELL-THOUGHT OUT BY WHETHER THE DETAILS ARE RIGHT.

TECE has been active in system construction for over 30 years. Our experts visit construction sites every day, speaking to fitters, architects and planners. Our customers tell us about their experiences with the system walls and always have good ideas for improvements in detail. We implement these needs in our product development. After all, satisfied customers who like working with TECESystem are the basis of our success.



Sound insulation

All components are sound-insulated. Screwed components can still be adjusted on site.

REFERENCES

Convincing in theory.

Proven in projects of all types and sizes.

A good reference for both new build and refurbishment

Discover the variety of possible solutions with industrially prefabricated installation walls for new builds and refurbishments - always up-to-date and informative.



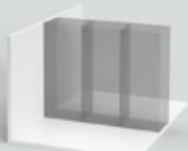
TECESystem variants



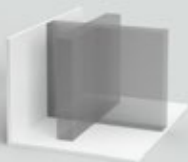
Shaft with partially open pre-wall



Room-high pre-wall



Partition wall



Customised combined arrangements



Shaft in the corridor, part-height pre-wall in the bathroom

1



2



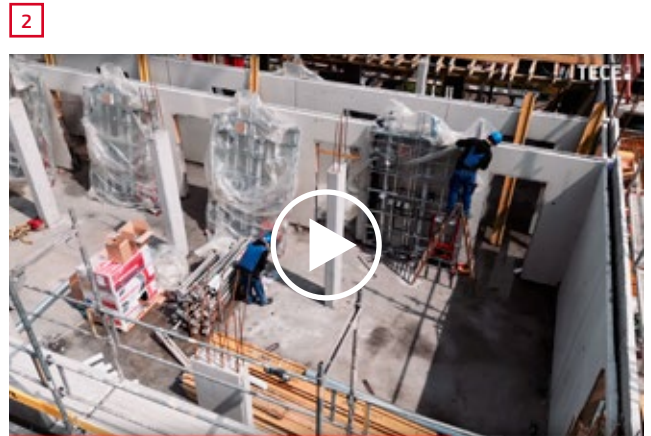
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- 1 Refurbishment in occupied condition, Duisburg
- 2 New build apartment block, Berlin
- 3 Shaft refurbishment in occupied condition, Hamburg

FROM PRACTICE

Information, interviews and exciting insights into practice - in our TECESystem playlist you will find informative videos on the subject of prefabrication.



Examples of construction projects with TECESystem

Find out in these videos why the serial prefabrication of installation walls with TECESystem is the solution for more productivity in construction projects.



- 1 TECESystem in refurbishment - advantages of modular prefabrication in refurbishment projects
- 2 Conversion in mind - best practice for serial prefabrication using the example of the Germania Campus Münster
- 3 TECESystem in the niu HUB hotel, Düsseldorf

For more information visit
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Appearance and texture may vary depending on material, manufacturing process and lighting conditions.
In order to improve the flow of reading, no distinction is made between feminine, masculine and non-binary in gender-related expressions. However, all genders are always implied.