

**KNECHT-Systemkeller®  
System Cellars  
Constructional and Functional  
Specifications S/01/2005/E**



**Improved building and living comfort  
with your KNECHT prefabricated cellar!**

**KNECHT**  
Betonwerke · Fertigteilkeller

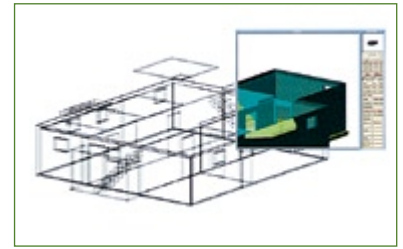


# KNECHT-Systemkeller®

## System Cellars Constructional and Functional Specifications S/01/2005/E

### Cellar statics

The cellar statics are calculated in a verifiable form for the prefabricated construction method in accordance with the KNECHT system.

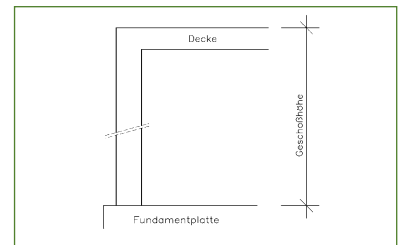


### Planning

The plans for the production of the prefabricated cellar, including the mounting plans for walls and ceilings, are prepared.

### Floor-to-floor height

The cellar's design is dimensioned for a floor-to-floor height of 2.40 m (base size from the foundation plate's upper edge to base size upper edge cellar ceiling, respectively without floor construction).



### Expert site management

The expert site management assumes an important function with regard to the construction of the important cellar building section. KNECHT has all services contractually specified with KNECHT monitored by a qualified expert site manager. Together with the client, a site inspection is performed prior to the construction works' commencement. If desired, the company commissioned by the client is instructed on the earthworks. The expert site manager discusses all important aspects of the building permission procedure, including the base height and the excavation depth, with the client. The mounting works are supervised by the mounting manager during the cellar mounting procedure. The expert site manager or the mounting manager accepts the contractually agreed KNECHT services together with the client.

### Construction site equipment

The construction site equipment comprises the provision of the tools, devices, and machines required for the KNECHT services as well as a truck-mounted crane with a carrying capacity up to 50 t and a throat of 18 m for the duration of the cellar's construction time.

#### Batter board

Serving as a basis for the true-to-size construction of the KNECHT prefabricated cellar, the batter board is erected in the completely excavated foundation pit. A measurement of the building is not included.



### Building drainage

The experience over the past years has shown that the canal bottom of the public sewer very often lies above the cellar bottom. The external cellar walls are therefore provided with recess units for the drainage lines to be routed by the client in accordance with the plan specifications of the client/architect.

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### Foil as separating layer

Beneath the complete foundation plate, a foil is laid out as separating layer.



### Grounding rod according to VDE regulations

A galvanized grounding strap is inserted in the foundation plate as an equipotential bonding conductor, including all connections, with a connection lug in the cellar.



### Foundation plate as spread foundation

The cellar's foundation is designed in accordance with the statics by KNECHT in a thickness of approx. 18-20 cm, including a basic reinforcement of approx. 8 kg/m<sup>2</sup>. The concrete's stability class amounts to C 16/20. As an alternative, the foundation plate can be manufactured with non-reinforced strip foundations beneath the external walls up to a width of approx. 40 cm, beneath the bearing internal walls up to a width of approx. 50 cm with a total thickness of approx. 25-30 cm. The foundation plate has a thickness of approx. 15 cm and is reinforced with a single layer of wire fabric reinforcement Q 188. The reinforcement can be replaced by steel fibers in both cases. The frost-free foundation of the foundation plate is attained when the external cellar walls are normally filled up to a height of at least 80 cm with suitable soil. The foundation soil must have a minimum carrying capacity of 0.2 MN/m<sup>2</sup>.



### External walls in accordance with DIN 1045 as KNECHT triple wall

The extensive and true-to-size prefabricated elements are produced in the quality-monitored KNECHT concrete plants. By means of a special production procedure, a versatilely applicable wall system with double-layer reinforcement is manufactured. Both external surfaces have a smooth-formed finish. After the mounting, the gaps are filled with concrete, thereby creating a consistent and jointless concrete core. The total thickness amounts to approx. 20 cm.



### Bearing and non-bearing internal walls in accordance with DIN 1045

The internal walls are prefabricated as extensive, fully massive wall elements, including reinforcement, with a one-side smooth-formed finish. The bearing walls have a thickness of up to approx. 15 cm, the non-bearing internal walls approx. 10 cm. The number of internal walls amounts to maximally one longitudinal and one cross wall.



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### Internal wall joints

The vertical joints of the walls are closed. The horizontal joints remain open.

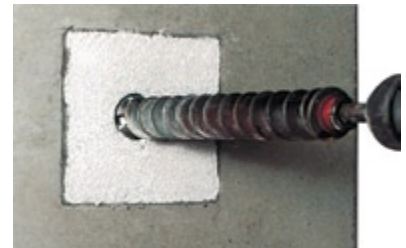
### Cellar ceiling in accordance with DIN 1045

The extensive, true-to-size ceiling elements have a thickness of approx. 5 cm and have a smooth-formed finish on the bottom side, the joints are open. After erection of the bearing external and internal walls, the site-mixed concrete is grouted over a total thickness of approx. 17 cm. For the flatness tolerance, DIN 18202, table 3, L. 2, is applicable. Thanks to the simultaneous concrete grouting of the ceiling with the KNECHT triple walls, a jointless connection is established. The basic price of the cellar ceiling comprises a total of up to 10 kg reinforcement per m<sup>2</sup> ceiling surface. The flooring, the weight of the non-bearing separating walls and a working load of 1.5 kN/m<sup>2</sup> are considered in accordance with DIN 1055.



### Recesses and openings

According to the recess plans provided to KNECHT, recess units are installed in the walls and in the ceiling. Door and window openings are considered in accordance with the plan specifications.



### Internal cellar staircase

The staircase is generally mounted together with the cellar. The concrete angle steps are underpinned with porous concrete stones or prefabricated concrete parts, without plaster. At the discretion of KNECHT, a prefabricated staircase element can be installed without underpinning. The staircase is built without a handrail and banister.



### Cellar windows

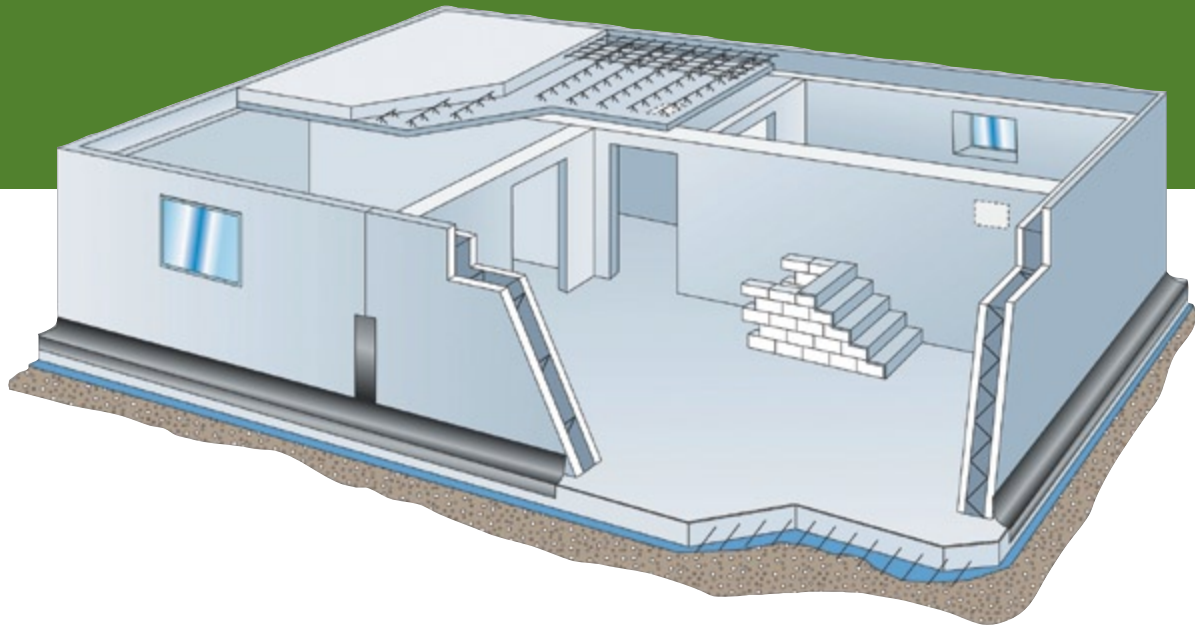
The simply glazed cellar windows have a size of approx. 80/60 cm. Up to 4 cellar windows are contained in the basic price.



### Sealing with the KNECHT HydroTech system

The horizontal and vertical external joints are sealed against soil humidity in the soil-filled section. Tried and tested products with test certificate are used. The visible vertical joints are finished with special grout. Due to our high concrete quality, water-resistant concrete, no surface sealing is required.





**Notes on the KNECHT-Systemkeller® system cellar and additional services which are not contained in these constructional and functional specifications or which are services of the client:**

For your cellar's construction, the specification contents serving as the basis of pricing (price list, offer or contract) are decisive in connection with these constructional and functional specifications.

**1. Constructional notes:**

These constructional and functional specifications are only valid in connection with the provided offer plan. Any services deviating from these specifications or requirements of individual federal states in the form of official directives or with regard to static experts are not considered herein. If the local soil conditions deviate from the mentioned values, additional measures must be taken. This also applies to construction works in earthquake regions, mining subsidence regions, the presence of quicksand or groundwater. The sealing of the external cellar walls must be provided with a suitable filling protection by the client to protect them against damage. At the discretion of KNECHT, the external bearing walls can also be designed as fully massive wall elements with a thickness of approx. 15 cm. The foundation system is adjusted accordingly. Bearing internal walls or individual loads from the building construction require a bearing wall or column in the cellar. In case of plan modifications, additional measures are required. Any required services which are not ordered from KNECHT are carried out by the client himself or commissioned by the client. We expressly reserve the right to implement technical and constructional modifications which serve the advancement and improvement of our services.

*Any previous constructional and functional specifications for KNECHT-Systemkeller® system cellars become invalid with this new edition.*

**2. We would be pleased to prepare an individual offer for the following services for you:**

**Earthworks:** Preparation of service specifications with which you can independently effect the commissioning and execution of the earthworks. As an additional service, we offer the complete commissioning of the earthworks in your name and on your behalf. This includes the solicitation of offers from earthwork companies, the placement of the order and the verification of the respective invoice for you in addition to the service specifications.

We furthermore offer the following: Drainage beneath the foundation plate, rain drainage, drainage with flushing ducts, uncovering and closing of recesses and openings, supply and disposal lines (for power, gas, water, telecommunications, including wall breakthroughs with sealing and any required core holes), insulation-glazed cellar windows, external staircase, foundations, products from the KNECHT *ThermoTech* system such as, e.g. insulation boards, cantilever plates, substructure for conservatories, light wells, door frames and leaves, subsidences in the area of the foundation plate and the ceiling, KNECHT *HydroTech* systems such as sealings against non-accumulating or accumulating seepage water, sealings against groundwater and other measures required due to the condition of the foundation soil in connection with the KNECHT *GeoTech* systems, etc.

We also offer a comprehensive product range for special requests or special designs, e.g. garages, screening walls, areaway designs and further prefabricated elements for your building requirements.

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City, date

Signature(s) client(s)

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Name and address of the agent

# KNECHT: A strong partner – professional, experienced, innovative!

## KNECHT performance guarantee

The KNECHT production plants are subject to permanent quality controls within the scope of the DIN 1045 by internal and external units. The KNECHT group of companies is certified in accordance with DIN EN ISO 9001. In addition, quality monitoring is carried out on the construction site in accordance with the quality and test conditions RAL-GZ 518. The concrete for the prefabricated elements and their site-mixed concrete grouting corresponds to stability class C 25/30. The smooth-formed finish surfaces of wall and ceiling can be painted without plaster. The KNECHT wall elements offer a stability which significantly exceeds the requirements of the standard. The external wall surface has a water intrusion depth which lies way below the standard values.

## KNECHT advantages

- **Constructional and functional specifications**

Transparent clarity in word and image

- **Germany-wide presence**

Sites and plants throughout Germany

- **Internationally active**

e. g. in Austria, Luxembourg, France and Switzerland

- **Statics and site management**

by experienced KNECHT experts for your cellar

- **KNECHT system solutions**

**GeoTech systems** – for improved safety also on difficult foundation soil

**HydroTech systems** – efficient solutions for the problems of soil humidity, seepage water, groundwater and pressing water.

**ThermoTech systems** – high-performance insulation technology for all requirements

- **First-class logistics**

Modern corporate structures, efficient teamwork from the planning to the completion

- **Warranty PLUS**

The proven KNECHT performance guarantee is the safety plus for all construction services

- **More than 35 years of experience**

Profit from our experience gained from the construction of more than 30,000 cellars

- **Innovative strength**

Always at the pulse of time – with new product ideas and patents

*Over generations, KNECHT has been building for generations!*

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