

## EEP Model Set V11NKS10046 - "Mine Set 5"

With the EEP model set "Mine Set 5" you receive models for designing a mine. This set 5 contains models for designing a mine with a "depth" (miner's language: "Tiefe") of approx. 300 metres below the surface. The external design of the models was inspired by the layout of shafts 1, 2 and 8 on the colliery site of the "UNESCO - Zollverein World Heritage Site". The models are not true-to-scale models that correspond exactly to the prototype, but merely "prototype-like" models that are freely modelled on the prototype.

The models are used to recreate a shaft with a traction sheave hoisting system. The traction sheave hoisting system (also known as "Koepe hoisting") is a type of shaft hoisting system in which a traction sheave is used as a rope carrier. It is also called Koepe hoisting after its inventor Carl Friedrich Koepe. (Wikipedia: Traction sheave hoisting).

(Source: Wikipedia, https://de.wikipedia.org/wiki/Treibscheibenförderung)

<sup>&</sup>quot;Characteristic of traction sheave conveying is the use of only one rope. Here, the haul rope is guided via the traction sheave (Koepescheibe) to the conveyor baskets, which are suspended from the haul rope. The power transmission from the traction sheave to the haul rope is only by frictional contact. With increasing depth, the dead weight of the top rope becomes more and more important. To compensate for the weight of the rope, a bottom rope must be attached under the baskets. Without this, the top rope would slip on the traction sheave due to its own weight..."

"A pit cage, also called a pit cage or simply a pit cage, pit cage, pit cage or also, especially in Austrian mines, pit cage, is a means of conveyance used in mining to convey material and the mineral resources extracted underground. Conveyor cages are built in such a way that they can accommodate the mine cars used for roadway haulage. As a rule, pit cages are also used for rope travel. However, special safety precautions are required for this."

(Source: Wikipedia, https://de.wikipedia.org/wiki/Förderkorb)

"Conveyor cages must be constructed in such a way that they have as little weight as possible and still have sufficient durability. This is necessary in order to have the lowest possible dead load. This is of considerable importance, especially in shafts with a great depth, as the dead weight of the hoisting ropes is very noticeable here."

(Source: Wikipedia, https://de.wikipedia.org/wiki/Förderkorb)

"The filling point (Mz. Füllorte or Füllörter), also called shaft filling point or stoping, is the functional interface in underground mining between the mostly seig (vertical) shaft winding and the seaming (horizontal) roadway winding. It is the underground counterpart to the pit bank.

(...) From a spatial point of view, the filling point is the intersection of a shaft and a roadway or gallery. The term "filling place" originates from the time when in this part of the mine workings the contents of the mine cars brought here from the mine were (re)filled into the hoisting buckets of the shaft hoisting. The filling station is the largest transfer point for materials in the entire mine workings. It serves as a storage area for the material to be conveyed and thus balances the quantities of material conveyed in the shaft and in the roadway. The task of the filling point is to enable a smooth transition between the roadway and shaft haulage. At the same time, the filling station is a transfer point for the miners travelling to and from the surface. The filling station must therefore be constructed in such a way that the haulage operations are as simple and easy to operate as possible." (Source: Wikipedia, https://de.wikipedia.org/wiki/Füllort)

The track objects in the Track layer and the properties in this model set each have various functions that can be controlled in the eep-typical way with contact points or also in the object properties via sliders, furthermore via Lua.

For example, in the models of the so-called "underground filling site" the outer concrete shell can be hidden via an axis control, so that a view into the models is possible.

In the track object of the actual hoisting shaft, the hoisting cages can be moved up and down independently of each other. Furthermore, the sliding gates in front of the shaft openings can be closed or opened. For this purpose, a coordinating control via switching circuits or via Lua is recommended so that the pit cages move up and down alternately and the sliding gates are closed in each case before departure and opened only after arrival.

In the area of the track objects of the so-called "filling location", the tracks can be laid largely freely.

Building the models from the set V11NKS10046 Mine Set 5

1.step:

Raise the terrain around the shaft to 300 metres above sea level (original surface when creating a new plant in EEP).

This places the models/buildings set up below at the surface at "absolute" 300 metres "above sea level" or "relative" (to the current ground surface) at a height of zero metres. This action serves to create sufficient space below the ground surface for a shaft with a "depth" (Teufe) of 300 metres.

2nd step: Engine house (real estate), winding tower (real estate), Shaft hall (track object / tracks) Shaft (track object / tracks)

and filling location 01 (track object / tracks) to identical coordinates.

The model filling location 01 is automatically set to a height of 300 metres below the surface of the layout. A first camera should then be positioned down there.

A second camera should also be saved at the same time at the height of the shaft hall.

## Step 3:

The model "Bergwerk\_Berg5\_KS1" (real estate) should be inserted at the identical coordinates of the models winding tower, shaft hall, shaft and filling location, but at a height of relatively (!) -250 metres!

## 4.step:

To make it easier to set up the models in the area of the filling location, the terrain around the shaft should (only) be temporarily (!!) lowered by 300 metres to zero metres.

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Tip: The models of the type "filling place" should always be used in an area of the layout that still has a height of 300 metres, i.e. is not lowered, because then the models will immediately appear at the correct height. They can then simply be moved to the area directly next to the shaft, which is only temporarily lowered by 300 metres.

Because - as a reminder -:

The "filling location" models are always used 300 metres below the surface of the installation.

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After completion of the construction of the models and laying of the tracks in the area of the filling point as well as construction of the adjoining galleries, the terrain should then be raised again to the original height of 300 metres.

The models in this set also include a "rolling stock", to be found in the EEP category Machines. It is a rather small, inconspicuous model. In fact, only a simple, small coupling hook is visible on this model. Actually, this model of an almost "invisible" rolling stock only serves to turn models of rolling stock that are not self-propelled into self-propelled objects, such as so-called "Hunte" (mine cars), which can then represent the transport of goods in the galleries, at the filling point underground, in the pit cage in the shaft and also above ground in the area of the shaft hall and the car circulation.

A demo layout is included in the model set. This layout was created with EEP 17.

The models each have the required number of levels for the representation of different degrees of detail at different viewing distances, so-called LOD levels ("level of detail"), which lead to a reduction of the model details to be calculated of up to 90 percent.

to be calculated. The models are intended for EEP versions 11 and higher. When used in older EEP versions, there may be jumps in the display when changing LOD levels. This does not represent a model error, but is due to the principle.

The models were built with Blender. To create the model textures, the programme "Brick" and textures from FS1 - Frank Schäfer were used.

Textures from https://www.textures.com were also used:

"One or more textures on this 3D model have been created with photographs from Textures.com. These photographs may not be redistributed by default; please visit http://www.textures.com for more information." This does not restrict the use of the models under your registration. Nor does it restrict the publication of images from your facilities that feature these models."

For the extended construction of a more extensive mining installation, namely also with underground mining tunnels, the other model sets from this series are recommended:

V11NKS10042 Mine Set 1

V11NKS10043 Mine Set 2

V11NKS10044 Mine Set 3

V11NKS10045 Mine Set 4

The following models are included in this model set:



Scope of delivery:

Real estate: Bergwerk\_Maschinenhalle\_KS1 Bergwerk\_Foerderturm\_01\_KS1

Track objects:

Bergwerk\_Schacht\_302\_GO\_KS1 Bergwerk\_Schachthalle\_2\_KS1 Bergwerk\_Schachthalle\_3\_KS1 Bergwerk\_Fuellort\_11\_GO\_KS1 Bergwerk\_Fuellort\_12\_GO\_KS1 Bergwerk\_Fuellort\_16\_GO\_KS1 Bergwerk\_Fuellort\_17\_GO\_KS1 Bergwerk\_Fuellort\_18\_GO\_KS1 Bergwerk\_Wagenumlauf\_A1\_KS1 Bergwerk\_Wagenumlauf\_B1\_KS1 Bergwerk\_Wagenumlauf\_B2\_KS1

Track styles (splines): Bergwerk\_Gleis\_600mm\_01 Bergwerk\_Gleis\_600mm\_07

Rolling stock (machines): Bergwerk\_Maschine\_01\_RM\_KS1

Documentation: Doku\_Bergwerk\_Set\_5\_De\_KS1.pdf Doku\_Bergwerk\_Set\_5\_En\_KS1.pdf Bergwerk\_Berg5\_KS1

Bergwerk\_Wagenumlauf\_C1\_KS1 Bergwerk\_Wagenumlauf\_C2\_KS1 Bergwerk\_Wagenumlauf\_D1\_KS1 Bergwerk\_Wagenbruecke\_1\_KS1 Bergwerk\_Wagenbruecke\_2\_KS1 Bergwerk\_Wagenbruecke\_3\_KS1 Bergwerk\_Wagenbruecke\_4\_KS1 Bergwerk\_Wagenbruecke\_5\_KS1 Bergwerk\_Wagenbruecke\_6\_KS1

Bergwerk\_Gleis\_600mm\_11

Doku\_Bergwerk\_Set\_5\_Fr\_KS1.pdf Doku\_Bergwerk\_Set\_5\_Pl\_KS1.pdf

Installation paths: Immobilien: Resourcen\Immobilien\Industrie\Bergwerk\_KS1\ Gleisobjekte: Resourcen\Gleisobjekte\Gleise\Bergwerk\_KS1\ Gleisstile: Resourcen\Gleisstile\Gleise\ Rollmaterial: Resourcen\Rollmaterial\Maschinen\Bergwerk\_KS1\

Have fun with the model sets Klaus S., KS1 (aka Byronic) wishes you.

The following pictures show a prototypical arrangement of the models of the set "Mine Set 5":























