

## EXPANDED-CLAY PLANT SUBSTRATE INFO / DATA

### Origin and manufacture:

Expanded clay is made from low-lime clay with fine organic components, industrially ground into small, partly asymmetrical pellets and then baked at around 1200 degrees Celsius in a rotary kiln. The inorganic components are driven out and the beads expand to up to 4 to 5 times their original size. The resulting "expanded-clay beads" have a porous, light core with a virtually sealed surface and are mechanically separated into different grain sizes using sieves.

### General characteristics:

Expanded-clay substrate is frost- and weather-proof, sterile, and biologically and chemically neutral. There are different grain sizes depending on the intended use. There are also substrates made from crushed grain marketed under brand names such as Lecadan®. Depending on the grain size, the specific weight lies in the following ranges:

Bulk density: 250 to 750 kg/m<sup>3</sup> in accordance with DIN 4226-2  
Density by volume: 450 to 1300 kg/m<sup>3</sup> in accordance with DIN 1306  
Strength: 0.8 to 5.0 N/mm<sup>2</sup> with 20 mm thrust/pressure

### Fire performance in accordance with DIN national and European standards:

According to the tightened European standard DIN EN-13501-1, expanded clay still fulfils the highest fire classification A1 (non-combustible). In the old DIN 4102 it was allocated to the fire classification A (non-combustible).

This continues to give hydroculture a leading position in interior landscaping, as expanded clay fulfils all fire safety standards in public and commercial spaces. When using non-combustible metal or ceramic planters, hydroculture including clay substrate fulfils all stated requirements.

### Use in hydroculture, semi-hydroculture, tree nurseries and the construction industry:

Expanded-clay substrate is not just used for hydroculture; the crushed grain is also used in semi-hydroculture. Expanded-clay substrates are also used as aggregates for soil substrates in order to maintain structure and aeration in the long term.

In the construction industry, expanded clay serves as a bulking material for drainage layers and is also preformed into heat-insulating building components using cement, lime and clay aggregates or is processed into light walls and ceilings. The expanded clay used in the building industry is not automatically also suitable for plant propagation. Especially pure, tested products are offered as plant substrates. The manufacturer's recommendation must be observed.

### Disposal:

Large quantities of expanded clay should be disposed of separately as construction waste and can then be used as bulking material in road construction, etc. Cleaned expanded clay can also be mixed with cement, as a basis or aggregate material in the creation of lightweight concrete, among other things. As expanded clay is a pure, natural product, there are numerous possibilities. Used, cleaned expanded clay is also very well suited to use as a drainage layer for soil-grown plants as well as in garden and path construction and as an aggregate to loosen soils, so consumers themselves can reuse expanded clay too.

If you have any questions, please contact us at: [www.hydro-klein@email.de](mailto:www.hydro-klein@email.de)