TS3
Timber Structures 3.0

# FAQ - Casting resin used in TS3

**The only biobased casting resin for load-bearing timber construction**

2K PUR (two-component Polyurethane casting resin) is partly produced from biobased materials. The organic matrix of the mixed polyurethane casting resin has around 50% of biobased content[1] derived from renewable raw materials such as vegetable oils and their derivatives.

**Casting resin used in TS3 technology is the only casting resin with biobased content.**

**Hazardous chemicals**

The 2-component polyurethane casting resin consists of a polyol part A and an isocyanate part B. The raw materials used comply with the legal requirements of the European Union (EU) and with REACH. However, for both casting resin parts A and B, the material safety datasheet must be studied prior to use for safe and professional working with the casting resin. Recommended personal protection and hygiene measures must be taken as mentioned in the material safety data sheet.

**Casting resin used in TS3 technology does not contain any chemicals mentioned on the list of Substance of very high concern (SVHC), thus does not danger human health and environment.**

**Volatile organic compounds (VOC), Emissions, Indoor air quality**

From the toxicological point of view, the fully cured polymeric casting resins are completely safe for human health and the environment under standard ambient conditions. After complete curing of the two components of the casting resins with each other, an inert product is formed in the wood construction that does not emit any harmful substances to the environment. In addition, we would like to point out that 2K PUR casting resins are free from formaldehyde, organic solvents or other volatiles.

**Casting resin used in TS3 technology does not cause any harmful emissions in residential buildings and has no harmful impact on indoor air quality.**

[1]The actual measurable biobased content describes the biobased content in a sample of a material as can be measured by C-14 radiocarbon analysis according to ASTM D6866, ISO 16620-2 or EN 16640. Biobased content certified according common testing standards results in the fraction of biobased carbon relative to the total carbon in a product. Other elements like oxygen are not counted .

**End of life / disposal of wood elements**

The disposal of wood elements (e.g. after demolition of a building) can be carried out together with other timber, either in a construction-waste dump or burnt in a wood incinerator for energy use – which would close the carbon cycle of the natural product dwood and realize it's quality as a renewable resource.

Since the proportion of casting resin in the wood composite is normally very low, the composition of both the combustion gases as well as the residual ash are the same as the combustion products of natural wood. No additional noxious emissions (toxic substances, heavy metals, formaldehyde, hydrochloric acid etc.) are expected to be formed from the casting resin during combustion. The presence of the small amount of casting resin will not generate such additional heat, that it will become too exothermic. However, the official laws and local legal requirements concerning the emission of fire gasses and dust must be adhered to. Under these circumstances, the consistence of the exhaust emissions is expected to be the same as when burning natural wood.

**With casting resins used for TS3 technology bonded wood can be safely burned in controlled combustion plants from a chemical point of view.**

**We are happy to discuss with you, any other questions related to casting resins used in our technology solutions. We are in close connection with our casting resin experts.**

Timber Structures 3.0 AG
Tel: +41 58 255 42 00
info@ts3.biz
www.ts3.biz

# TS3-Technologie

TS3 connects wood on the face side and thus enables point-supported large surfaces made of timber.

The technology is the result of 10 years of research and development by Timbatec together with the Bern University of Applied Sciences and ETH Zurich.

TS3
Timber Structures 3.0