

# foam concrete: from the laboratory to the building

We are Slovak company specialized in manufacturing of technical foam and development of manufacturing procedures for industrial production of foam concrete.

This presentation contains available data about developed foam concretes, their manufacturing and verified uses.

There is also an available generator for manufacturing of test bodies with a guaranteed repeatability of test mixtures with volume up to 50 l of fresh mixture.

The foam concretes are manufactured using the generators of GFS/M 8 and progressively implemented in network of CEMEX Companies

Further details available upon your request.

"foam concrete as concrete"

Foam concrete FC300 - 900 kg/m<sup>3</sup> from  
mixing plant and transport to building by  
truck mixer

***iwtech***

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# Production plant

- Mixing plant:** same as for concrete production, before production of cement grout mixing center must be cleaned from residues of the previous concrete production
- Truck Mixer:** the same as for concrete transport, before production of cement grout mixing drum must be cleaned from residues of the previous concrete production
- Generators:** GFS 8 – stable, for industrial production FC, without the chassis, see DS 102  
GFM 8 – mobile – for transport in public roads, for industrial production FC, see DS 101  
GFS LabE – for manufacturing of test bodies, see DS 105
- Pump:** Screw type, for instance Estrich Boy FHS 200  
piston type, for instance Putzmeister P 715

# FC 300 – 900: in the concrete plant



concrete plant with truck mixers



GFM 8





# FC 300 – 900: in the concrete plant



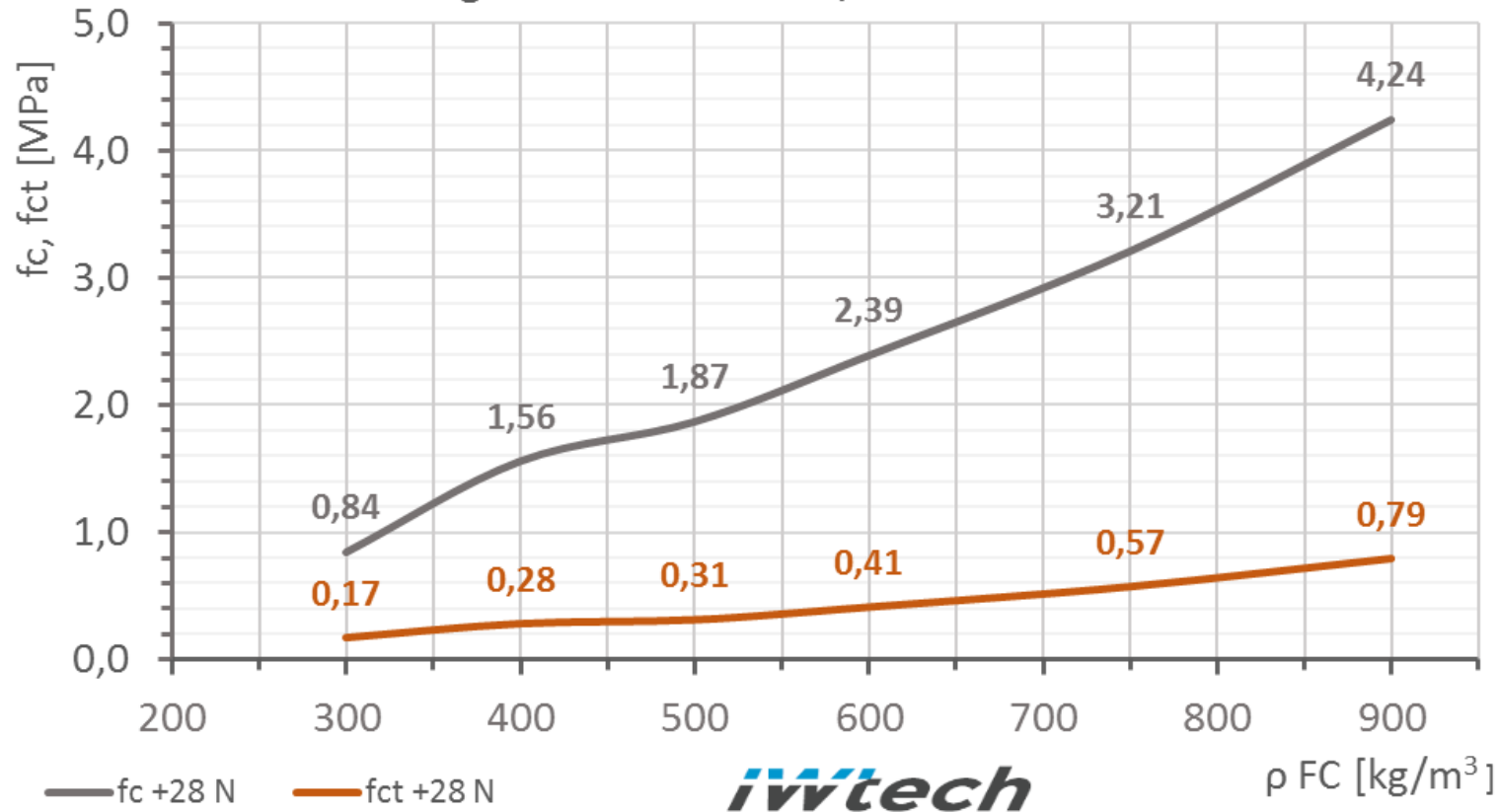
filling of the drum by technical foam and cement grout,  
homogenization of fresh mixture during the transport,

# Raw materials for foam concrete (FC) production

- Cement:** for FC production of 300 – 900 kg/m<sup>3</sup> according to the iwtech production all available cement classes may be used, verification of compatibility of cement with used technical foam (TF) must be provided prior the use, depending on the achievable hardnesses
- Components:** finely ground slag (GGBS), finely ground limestone
- Agregates:** fractions 0/2 or 0/4 mm, mined type is more suitable
- Water:** clean, without chemical additions residues from concrete production
- Tech. foam:** made in GFS/M 8 of FC1 concentrate and added to the drum with identified quantity, other foaming concentrates must be verified in relation with their function in all production cycle: mixing + transport + pumping + hardening

# FC 300 – 900: strengths

Lab. tests of FC: recipe NORMAL, dependency of  $f_{c+28}$ ,  $f_{ct+28}$  &  $\rho_{FC}$ ,  
Hagerman = 18 - 19 cm, November 2017



- 300 – 900 kg/m³ - mainly used densities
- prescriptions specified with regards on the economy, not for maximum achievable hardnesses
- verified in industrial manufacturing
- used ingredients:  
CEM I 42,5R + GGBS + 0/2 mm
- available as Economy and Hard variants



# FC 300 – 900: on the building



screw or piston pump



# FC 300 – 900: on the building



**foam concrete in order quantity and quality**

# FC 300 – 900: quality control on the building





# FC 300 – 900: simple surface alignment



resulting flatness to  $\pm 5 \text{ mm} / 2 \text{ m}$



# FC 300 – 900: further examples of use

## **Applications in industry verified by time:**

- Levelling of foundation in residential and office buildings and by imbedding of wiring material created flat ground for assembly of acoustic insulation, alignment of the vault surface
- Creation of supporting ceiling layer from the trapezoidal sheet metal
- The slope layer of flat roof with up to 3% slope
- Stabilization and protection of large diameter pipe in the excavation
- Filling of pipe guard, for example under the road
- Layer improving the properties of industrial floor background
- Substitution of backfills between the foundation strips of family house
- Layer improving properties of parking for motor vehicles
- Filling of cavities in buildings, earth, etc.

On markets in SK, CZ, PL, UK since 2013

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Thank you for your attention



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