

Press Release 2019-02

MAI[®] International GmbH

Shaping the Future with Foam Concrete

Feistritz/Drau (AT)/München (D), 8th April 2019. **The Austrian MAI[®] International GmbH has specialised in devising future-oriented products for market niches. For over two years the Carinthian specialists have been busy researching, developing and testing systems to produce foam concrete and foam mortar. As a result, the pioneering Carinthian company was recently awarded the Econovius special prize by the Austrian Economic Chamber for outstanding innovative achievements on March 28, 2019 in Vienna.**

Foam or porous lightweight concrete (PLC) has currently the potential to replace standard solutions (based on polystyrene. i.e. expanded polystyrene particle foam – EPF) completely thus making a significant contribution to the topic of sustainability. “Compared to EPF compensatory fills, the installation time can be reduced by 50 %, costs considerably lowered and the burden on the environment eased. Injecting foam concrete when it comes to refurbishing tunnel structures for instance, represents a completely new technology, which we want to market globally. At stake is a novel grouting method to redevelop rail or road tunnels, in the case of which the water-resistant PLC thanks to its higher density (1.180 kg/m³) displaces the water in voids. The great advantage of this new method compared to conventional mortar and synthetic injections is to be found in the actual costs saved: as opposed to the standard method as much as 40 % less grouting agent can be applied by adding foam”, Hannes Papousek, MAI[®] International GmbH’s managing director explains.

New Grouting System

The newly devised grouting unit for foam mortar consists of a static mixer, a dosing pump and a mixing device for a chemical additive. The internally networked processing system functions continuously and can be operated intuitively like a smartphone. In the system, a dry mortar is mixed, a foam produced with an exactly determined consistency and density. It is permanently monitored to safeguard high quality. Towards this end, the innovative Carinthian company has developed three concepts:

- System 1 for PLC injections in foundation engineering,
- System 2 for industrial clients, in the case of which the complete PLC system is firmly mounted on a silo on-site, and
- System 3 as a mobile system for civil and foundation engineering as well as for 3D concrete printing.

Such compact foam mortar systems are already being used successfully in Europe and Japan.

...for the Sake of the Environment

The ecologically high-grade lightweight concrete, which produces little CO₂ when manufactured and saves considerable energy, is for instance applied in civil engineering as a levelling mortar for insulating purposes, in both cold and hot regions. Compared to compensating fills containing polystyrene, foam concrete can be placed a lot more speedily and effortlessly; it is completely dust-free during processing and provides high process safety.

Porous concrete existed back in the 19th century and porous lightweight concrete has also been in use for decades on end. Usually, PLC is produced discontinuously on-site in large, unwieldy machines that are complex to operate with open mixing systems or in patch operation. It is also possible to supply it in the form of a finished material from a ready-mixed concrete facility. Most of the units available on the market are patch systems, in the case of which mortar is mixed in an open mixing system prior to foam being added to it until the density attains its desired value. An

important reason why PLC has never really made it on the construction site is the high demands placed on the quality of the construction material. For the PLC's strength diminishes substantially if the foam or mixing quality is lacking, high shrinkage occurs or in the worst scenario the PLC slumps completely. MAI® International GmbH offers innovative systems here for producing foam concrete and foam mortar, which sustain our environment and makes work on the construction safer.

MAI® International GmbH

The Austrian company MAI® International GmbH develops, produces and markets mixing pumps for applications spanning the entire spectrum of plastering and grouting technology. The tradition-steeped company from Carinthia is the world's leading provider of grouting machines. "MAI stands for Man Assisting Innovations, in other words, we are united by the desire to create something that is novel, even unheard of, in order to make people's lives easier. The individual is our main concern", is how managing director Hannes Papousek puts it. "Every contact with our customers has one sole target: We want to be first choice for our customers and make a permanent impact on them".

For further details please access our homepage
www.mai.at

((Text: 4,820 touches incl. spaces/750 words/2 pictures))

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Pictures

Figure 1: By pressing a button, different foam concrete qualities and mixes can be selected, such as here at MAI[®] International's construction site silo

Figure 2: Foam concrete can be placed quickly, safely and dust-free with the newly developed system, such as this light levelling mortar
(Credits: MAI[®] International)



Figure 1

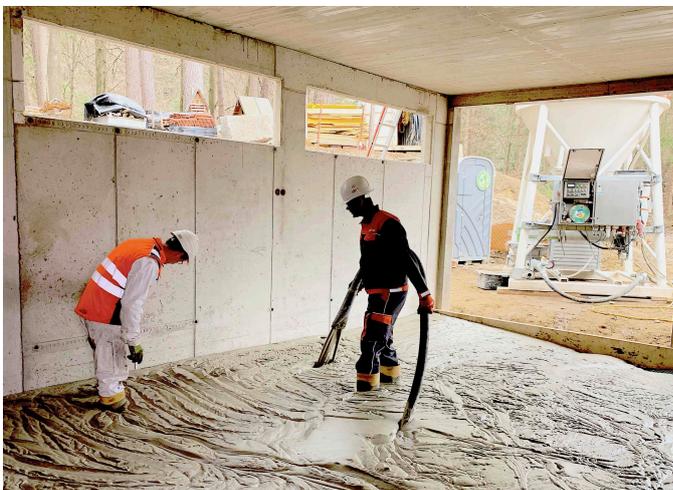


Figure 2