

Anti-Clay Foam Agent for Tunnel Boring Machines

Product description

CPF 100 liquid foaming agent is designed for use in soils conditioning high concentrations of clay, and as a dust suppressant in hard rock tunneling and mining applications.

CPF 100 is a foaming agent especially designed for soil conditioning in Shielded Tunnel Boring Machines.

Field of application

- Reduction of clogging and adhesion effects on the cutterhead
- Creation of a plastic soil material which can be easily excavated and transported
- Avoiding re-agglomeration of clay chips to blocks
- Reduction of cutterhead torque
- Increase in TBM speed

Consumption

Typically the CPF 100 is made into a 2–4% (typical range 2 – 3%) solution in water. UGC-NCH (see separate data sheets) can be added with the CPF 100 to strength the foam or adjust the properties of the excavated soil.

Features and benefits

- Improved soil behavior
- Easier 'mucking'
- Environmentally friendly

CPF 100 has been especially developed for soil conditioning in tunneling with shielded TBM excavation. Generally the product when mixed

With the soil provides for:

- Reduced permeability and increased sealing at the face
- Creation of plastic deformation properties in the soil, which provides an even and controlled support pressure and increased face stability
- Lower inner friction and lower abrasiveness of the soil at the cutter head through to the screw conveyor and conveyor. This reduces power consumption; enables soil extraction and conveyance, as well as reducing wear costs.
- Reduces stickiness in certain soils, which would lead to problems with blockage
- In hard rock tunneling and mining it can be used for dust suppression

Packaging

CPF 100 is available in standard 1000 liter drum.

Storage

The storage temperature of CPF 100 is between 5°C and 40°C. If stored in original tightly closed containers CPF 100 will have as shelf life of 12 months.

Do not allow the product to freeze. It is recommended that your local representative be consulted prior to the use of any product that has become frozen.

Safety precautions

CPF 100 contain no hazardous substances requiring labeling. However, standard precautions for handling chemical products should be observed: Avoid eye and skin contact and wear rubber gloves and goggles.

If contact occurs, rinse with plenty of water. In case of eye contact seek medical advice. For further information, refer to the material safety datasheet.

Application procedure

Foam is produced by dispersion of air into an aqueous solution of the CPF 100

CPF 100 foam solution can be expanded with air to produce stable foam. The foam recipe, foam expansion and the foam injection rate into the face, working chamber or screw conveyor will depend on soil conditions encountered.

Typical values	
Form	Liquid
Color	Colorless to beige
Solubility in water	Total
Density@25°C	1.03 ± 0.03 [g/cm ³]
Ph	7.0 ± 1.5