

Dear customer,

This document provides information about a new type of concrete reinforcement – the steel fibre **FIBREX®-A1**.

### **FIBREX®-A1- Quality first**

The fibres **FIBREX®-A1** with the dimensions of **0.4 x 0.6 x 25 mm** are manufactured from high quality steel sheets of strength  $f_{stm}$  **350 MPa**. One kilogram of the input material yields circa 21 thousand steel fibres. The rectangular cross-section of the fibre provides larger specific surface area compared to that of the fibres with circular cross-section, which combined with the uniquely designed ends of the fibres ensures high efficiency of the fibres in the hardened fibre concrete.

A sufficient amount of randomly distributed fibres in concrete changes brittle concrete to a ductile fibre concrete with quasi-plastic behaviour upon crack initiation.

Since the dimensions of the fibre are small we can assume that only the cement matrix is reinforced with the fibres, that means only the fine particles of fibre concrete. It has been proved experimentally that small dimension fibres affect the compressive strength more than the large fibres, which also influence distribution of the coarse aggregate in concrete. Another positive consequence is the versatility of the **FIBREX®-A1** fibres which require no special mix design for ensuring workability of the fibre concrete due the size and strength of the fibres.

### **FIBREX®-A1- The right choice for your concrete**

Regarding the fibre parameters, fibre concrete with **FIBREX®-A1** fibres is suitable for fresh concrete applications, when fresh concrete can be processed by a variety of commonly used technologies, such as vibrating, pouring, shot concreting, etc.

Fibre concrete also shows favourable properties during maturing when dispersed steel fibres along with shrinkage joints help significantly to reduce the risk of microcrack occurrence.

**Fresh fibre concrete** can be produced by mere continuous pouring of fibres into the already prepared fresh concrete at the concrete producing plant.

### **FIBREX®-A1- Testing**

**FIBREX®-A1** fibres are continuously tested by the Klokner Institute of the Czech Technical University in Prague in cooperation with the Faculty of Civil Engineering, the Czech Technical University in Prague. We are working on new applications exploration in the cooperation with both of this institutions too.

### **FIBREX®-A1- Range of application**

- Concrete structures
- Concrete floors and surfaces
- Concrete roads and runways
- Precast structures
- Shot concrete
- Foundation
- Walls
- Concrete surface finishes

### **FIBREX®-A1- Advantages**

- Positive effect on concrete properties
- Time and labour savings – design, production and arrangement of classical steel rebars is no longer necessary
- Attractive price
- Easy applicability
- Versatility in application
- Complex consulting and customer service