

# BENTODEX

## Non-explosive expansive material for constructions breaking up

### 1. Product characteristics

Single-component dry expansive material intended for breaking up stone, concrete, reinforced concrete and masonry structures

- supplied as single-component
- easy mix preparation and manipulation
- absolutely safe process of breaking up materials
- no dynamic effects are created during this process unlike while using common explosives
- no chemical side effects on the material or surroundings

### 2. Use

**BENTODEX** is a non-explosive, single-component dry mix used for breaking up of larger segments of stone, destruction of concrete, reinforced concrete and masonry structures. It is also used in mining and breaking up of natural stone in sculpture and stonework.

### 3. Physical and mechanical parameters

|                            |       |
|----------------------------|-------|
| Color                      | red   |
| Annealing loss maximum (%) | 1.0   |
| Grain size (mm)            | < 0.2 |

### 4. Test certificates

The product is certified according to Act No. 22/1997 Coll. and Governmental Decree No. 163/2002 Coll. Continuous independent production quality control is provided by AZL 1687 LABBET®. Supervision of quality management, environmental and OSH systems is performed by Certification Body No. 3029.

### 5. Instruction for preparation and application

As a first step it is necessary to drill holes into the material that it to be broken up. The holes need to be angled in such a way that the **BENTODEX** material can be effectively poured in. Minimal diameter of the drilled hole is 30 mm, maximal diameter is 100 mm. The holes are drilled in rows distanced apart 5 to 20 times the diameter of the hole. In highly brittle materials the **BENTODEX** material is effective even with holes spaced 40 diameters apart (it is necessary to test on specific material).

Preparation of the expansive mix. **BENTODEX** is supplied as single-component. It is mixed with water in ratio 10 : 3 (i.e. 10 units of **BENTODEX** and 3 units of water). The material is continuously mixed into pre-measured volume of water. The material is added until a homogeneous paste results. The material is mixed using low-speed electrically driven propeller, or concrete mixer. After mixing it is necessary to pour the material into holes within 15 minutes, because then the process of hardening starts. During first hour after application hydration starts in the material and **BENTODEX** starts expanding, exerting pressure on walls of the drilled hole. The exerted pressure is approximately 70 MPa in dependence on the diameter of the hole and the amount of water in the mix. Breaking up of the material is finished in 16 ÷ 48 hours in dependence on temperature and humidity.

Neither temperature of the base nor temperature of ambient air shall be below + 5°C and above + 30°C.

### 6. Specific consumption

Specific consumption of the **BENTODEX** is between 5 and 18 kg per 1 m<sup>3</sup> of broken up material. In some specific cases the specific consumption can be significantly lower.

### 7. Packing and storage

**BENTODEX** is supplied in PE containers of 10 kg net. The product must be efficiently protected against moisture during storing and transportation. The shelf life of the product in original undamaged packing is 6 months.

### 8. Health protection at work

Work with **BENTODEX** does not require special measures. It is necessary to follow standard hygienic rules during work; using gloves, glasses and protective clothing. In case of accidental swallowing, it is necessary to seek out medical aid.

### 9. Waste disposal

During disposal of contaminated packages or clearing debris from product, it is necessary to follow the Act No. 185/2001 Coll. on waste, as amended.

### 10. Important notice

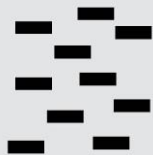
All information mentioned above, especially advice for processing and application of our products is based on our knowledge from the development of chemical products and on years of experience with applications in practice at standard conditions, and proper storage and use. Due to the differing conditions during processing, high count of



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products, varying nature and modifications of base and other external influences, the procedure based on the information provided or on other written or oral recommendations, may not always ensure satisfactory working results. BETOSAN s.r.o. assumes no liability for provided advice or recommendation. The applicator must prove, that he submitted complete information on time and in writing which is necessary for a proper detailed assessment by BETOSAN s.r.o. The applicator must test the suitability of the products for the intended application. Proprietary rights of third parties, above all, must be taken into account. All received orders are subject to our current "General sales and delivery conditions ". Please always make sure that you follow the most recent issue of the Technical Data Sheet. It is available, along with other information, at our Technical Department or at [www.betosan.cz](http://www.betosan.cz)

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