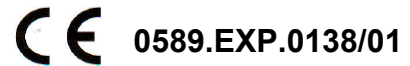




Producer: Explosia a.s., Pardubice – Semtín, Czech Republic



SEMTEX 1 A

explosive for special use

DIRECTIONS FOR USE

I. Scope and conditions of use

1. SEMTEX 1 A is designed primarily for special types of destruction work, for blasting work underwater and for boosting of explosives.
2. SEMTEX 1 A is permitted for surface work in inexplusive environment only under conditions stated in regulations on explosives and in these Directions.
3. SEMTEX 1 A is easy to shape, homogeneous material of pink to red colour.
4. SEMTEX 1 A is used in charges of various shapes and dimensions.
5. SEMTEX 1 A supplied and used shall have the properties stated in organizational standard TDV 455/05, II.edition, issued in Explosia a. s., Pardubice – Semtín and in ES Certificate on Testing of Type No. 0589.EXP.0138/01 (BAM).

II. Initiation and loading

1. To initiate reliably SEMTEX 1 A the primer shall be used of initiation capacity not less than that of standard reference primer REF.DET.3 within the meaning of EN 13763-15. Close contact of the primer surface with the mass of explosive shall be ensured; thickness of explosive mass layer under the bottom of the primer shall be 5 mm at minimum. The explosive can also be initiated by means of detonating cord of minimal core load 12 g pentrite (or pentritol) / 1m. The detonating cord shall be pulled through the explosive mass and ended with a knot that shall be retracted into the explosive mass in such a way that a close contact is ensured.

Initiation of explosive with detonating cord put to the mass of explosive is not permitted.

2. SEMTEX 1 A is allowed to be loaded into boreholes by lowering on detonating cord, or, prospectively, to the depth of 25 m at maximum, by free fall lowering. Pneumatic loading is not permitted.

3. SEMTEX 1 A can be portioned and shaped manually or by means of non-sparking objects (e.g. bronze) on soft bearing plate (e.g. wood).

III. Water resistance

SEMTEX 1 A can also be used in wet environment and under water. The height of water column above the charge shall not exceed 100 m and underwater exposure time shall not exceed 10 hrs.

IV. Temperature and pressure ranges for application

SEMTEX 1 A is allowed to be used within temperature range -20 °C to +60 °C. At these limit temperatures the temperature exposure shall not exceed 24 hrs.

V. Service life and storage conditions

SEMTEX 1 A is allowed to be used for not longer than 2 years since the date of production (service life as well as warranty period) provided the product is stored in the room, where temperature does not drop below -10 °C and exceed +40 °C regardless of relative humidity.

VI. Classification for transport

1. For the purposes of public transport SEMTEX 1 A is classified as follows:

RID and ADR - UN 0084 EXPLOSIVE, TYPE D, 1.1 D
IMDG - UN 0084, Explosive, Blasting, Type D, 1.1.D

2. For the purposes of storage SEMTEX 1 A is classified according to ČBÚ Decree No. 99/1995 of Coll. to Class AIII, serial No. 9.

VII. Packaging and marking

1. The explosive is supplied in most cases in these shapes:

- linear cartridge of diameter 21 mm and weight 250 and 300 g. It is packaged by 40 pieces in cardboard box. Individual cartridges are interleaved with refined hot melt paper. Two cardboard boxes are put into wooden stringer crate or cardboard container for transport. Net weight of explosive in transport packing is 24 kg. Diameter, number and weight of linear cartridges can be changed according to customer's requirement;
- cartridges in shape of bricks 135 x 115 x 45 mm of weight 1000 g. The cartridges are wrapped in paraffined paper (white silicone paper) and packed in PE bags. 25 pieces of cartridges are put into the transport cardboard box. Net weight of explosive in transport packing is 25 kg at maximum. Dimensions, number and weight of bricks can be changed according to customer's requirement;
- booster charge of weight 250 g packaged into paper tubes of light brown to light grey colour, from one side covered with tapaten. Charges are capped with yellow plastic caps with openings for detonating cord and detonator. Every charge is marked with the black and white label with relevant data. Charges are put into the transport cardboard box. Net weight of explosive in transport packing is 24,5 kg;
- booster charge of weight 500 g packaged into paper tubes of light brown to light grey colour, from one side covered with tapaten. Charges are capped with white plastic caps with openings for detonating cord and detonator. Every charge is marked with the black

and white label with relevant data. Charges are put into the transport cardboard box. Net weight of explosive in transport packing is 25 kg;

- booster charge of weight 1000 g packaged into paper tubes of light brown to light grey colour, from one side covered with tapaten. Charges are capped with white plastic caps with openings for detonating cord and detonator. Every charge is marked with the black and white label with relevant data. Charges are put into the transport cardboard box. Net weight of explosive in transport packing is 24 kg.

Weight, number and dimensions of supplied booster charges can be changed according to customer's requirement.

- sheet charges of dimensions 550x150x5 mm and weight 600 g packaged into silicone white paper or colourless polyethylene, eventually combination both of them. Every sheet charge is marked with the black and white label with relevant data. Sheet charges are put into the transport cardboard box. Net weight of explosive in transport packing is 24 kg. Weight, number and dimensions of supplied sheet charges can be changed according to customer's requirement.

2. Transport (forwarding) packing are provided with the data prescribed by ČSN 66 8011 and the Act No. 356/2003 of Coll., in the wording of later regulations. In addition, each transport (forwarding) packing shall be provided with marking CE and identification number of the notified person to accomplish subsequent supervision over the product.

VIII. Disposal considerations

Rests of explosive Semtex 1 A and packing are disposed in accordance with valid safety regulations, i.e. the explosive solely by explosion on the place approved for explosives disposal, the packing free of rests of explosive by burning in dangerous wastes incinerators.

IX. Information on hazardous defects

No occurrence of hazardous defects is supposed at Semtex 1 A explosive.

X. Misfires disposal consideration

Misfires disposal is accomplished according to applicable provision of ČBÚ Decree No. 72/1988 of Coll., in the wording of later regulations.

XI. Safety and health provisions

Safety and health provisions are provided in the Safety Data Sheet. The Safety Data Sheet is always supplied with the first delivery of the product or upon request.

XII. Fire-fighting measures

In case of fire not to extinguish and evacuate persons to safe distance. Toxic and irritating gases evolve on burning.

XIII. Legislation

Semtex 1 A as explosive is covered with Law No. 356/2003 of Coll. in the wording of later regulations and Law No. 61/1988 of Coll., in the wording of later regulations. Semtex 1 A is

the stipulated product according to Law No. 22/1997 of Coll., in the wording of later regulations, and Government Order No. 358/2001 of Coll., in the wording of later regulations.

XIV. Physical and function parameters

SEMTEX 1 A is a mixture of pentrite, plastic binder and marking agent.

Basic technical specifications according to TDV 455/05, II.edition:

| Quality parameter | Unit | Value |
|---|--------------------|-----------------|
| Calculated explosive characteristics: Oxygen balance | % O ₂ | -66 |
| Flash point, min. | °C | 150 |
| Trauzl test, min. | cm ³ | 280 |
| Detonation velocity, min. | m.s ⁻¹ | 7000 |
| Detonation transmission (□ 30 mm), min. | cm | 2 |
| Detonation capacity | - | detonator No. 8 |
| Density | g.cm ⁻³ | 1,44 ± 0,10 |
| Brisance, lead cylinder, min. | mm | 21 |
| Sensitivity to impact (hammer 2 kg, 50%), min. | J | 7 |
| Thermal stability | h/°C | 48/75 |

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