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

CE 0589

DETONATING CORD STARTLINE

DIRECTIONS FOR USE

I. Scope and condition of use

1. STARTLINE detonating cord (hereinafter detonating cord) is allowed to be used for surface as well as underground blasting in inexplosive environment under conditions stated in the regulations on explosives and in these Directions.

2. Detonating cord is not permitted to initiate such materials, where its use could cause their setting in fire or explosion.

3. The detonating cord supplied and used shall meet the properties defined in the organizational standards of Explosia a.s., Pardubice – Semtín for individual variants of detonating cords and in EC Certificates on type testing.

List of EC Certificates for individual types of Startline detonating cords:

Startline 6	0589.EXP.4103/02
Startline 10	0589.EXO.1145/17
Startline 12	0589.EXP.4104/02
Startline 15	0589.EXP.4105/02
Startline 20	0589.EXP.4106/02
Startline 40	0589.EXP.4107/02
Startline 80	0589.EXP.4108/02
Startline 100	0589.EXP.3276/08

4. Detonating cord can be cut with a knife on a clean wooden base plate or it can be cut with tools approved by the Czech Bureau of Mines (ČBÚ).

5. Branching of detonating cord in the detonating cord initiation network is realized by superposing the detonating cords to one another in the direction of explosion advancement and their firm connection in the length of at least 10 cm, or by knots. On initiation, no part of the same or more detonating cords may be unintentionally drawn near to one another to the distance less then 30 cm.

6. No twists or loops are allowed on the detonating cord in the detonating cord line.

7. Detonating cord initiates the explosives, in the Directions for Use of which the initiation by means of detonating cord is allowed.

8. Connecting of detonating cords: by superposing to one another in the length of 10 cm and fixing by means of textile tape or twine, or by a connecting link.

II. Initiation and loading

To initiate the detonating cord the primer is used of minimum initiation capacity corresponding to that of reference detonator REF.DET 3 (0.6 g Np) as per EN 13763-15, connected not less then 10 cm from the end of the detonating cord (the best to be fixed with textile tape, twine or connecting link). The base of the primer shall be directed in the direction of advancement of detonating cord explosion.

III. Water resistance

1. Detonating cord is allowed to be used in wet environment as well as for underwater applications. For Startline 20, 80 a 100, the pressure of water column shall not exceed 0.3 MPa for 24 hrs. Water resistance of Startline 6, 10, 12, 15 and 40, when placed in water under pressure 1 MPa, is 24 hrs. At the pressure of 12 MPa the maximum permissible time exposure is 30 minutes. On underwater application it is necessary to protect the ends of the detonating cord.

IV. Temperature range for application

Detonating cord is allowed to be used within temperature range -30 °C to +60 °C. Exposure time within temperature range - 30 °C to -20 °C and +50 °C to +60 °C shall not exceed 3 hrs.

V. Service life and storage conditions

Detonating cord can be used for not longer than 3 years since the date of production (service life as well as warranty period) provided it is stored within temperature range -15 to +25 °C at relative humidity up to 90 %.

VI. Classification for transport and storage

1. For the purposes of public transportation the detonating cord is classified as follows:

RID / ADR : UN 0065 CORD, DETONATING, flexible; 1.1 D.
IMDG : UN 0065; CORD, DETONATING, flexible; 1.1 D.

2. For the purposes of storage the detonating cord is classified according to CBU Decree No. 99/1995 of Coll., in the wording of later regulations, to Class A III, serial number 16.

VII. Packaging and marking

1. Detonating cord is reeled on non-metallic spools or to rolled to rolls in total lengths as given in bellow table, or according to the customer's requirement. Detonating cord is supplied in cardboard boxes or in other type of packing corresponding with RID/ADR regulation. The data concerning the lengths of individual detonating cords and permitted numbers of joined pcs are given in the following table:

	Total lentgh (m) reeled		Permitted number of joined pcs / minimal length of 1 pc at total length						
	on spool	in roll	≥20 m	≥25 m	≥100 m	100 m	180 m	250 m	400 m
Startline 6	50, 100, 125, 200, 400	50, 100			max. 2 pcs/min. 50 m				max. 3 pcs/min. 50 m
Startline 10	150, 250	50, 100			max. 2 pcs/min. 50 m			max. 3 pcs/min. 50 m	
Startline 12	150, 250	50, 100			max. 2 pcs/min.			max. 3 pcs/min.	

					50 m			50 m	
Startline 15	130, 150, 230, 250	50, 100			max. 2 pcs/min. 50 m			max. 3 pcs/min. 50 m	
Startline 20	50,100,125, 180	50, 100			max. 2 pcs/min. 50 m		max. 3 pcs/min. 50 m		
Startline 40	50,100	50, 100				max. 2 pcs/ min. 30 m			

Startline 80	25, 40	25, 50		max. 2 pcs/ min. 10 m					
Startline 100	25, 35, 40	25, 35	max. 2 pcs/ min. 8 m						

2. Reeling on spools

Detonating cord is reeled on non-metallic spool. The loose end of detonating cord is fixed on the periphery of the spool by means of adhesive tape. The inner end is fixed to the spool axis by means of adhesive tape.

3. Rolling to rolls

Detonating cord is rolled to rolls (without spools). Both ends are fixed by means of adhesive tape, serving also to secure the roll against being untwisted.

4. Supplies consisting of cutoffs

Cutoffs longer than 2 m are reeled on spools or rolled to rolls. Loose ends of the cutoffs shall be insulated and interconnected.

5. Each spool (roll), i.e. inner packing, shall be provided with label, bearing the following data:

- name of the product
- name and seat of the producer
- lot number and week/year of production
- number of m of the detonating cord
- No. of TDV
- core load /m
- weight of the explosive in the packing
- brief directions for use, storage and disposal

each outer packing shall in addition to the above data contain :

- No. of packing
- warranty period
- number of spools (rolls) in the packing
- the data following from transport regulations
- CE Marking of Conformity and identification number of notified person, conducting subsequent supervision on the product

Each product shall also be labelled with a traceability identifier pursuant to Directive 2008/43/EC and Directive 2012/4/EU for the identification and traceability of explosives for civil uses. The identifier is placed on the inner packing (spool or roll), an outer packing and the pallet. For detonating cord Startline 40, 80 and 100, the identifier shall also be placed directly on the cord.

VIII. Disposal considerations

The only permitted way of disposal of detonating cord is explosion.

Detonating cord is wound up to a ball or tied to bundle and put into blasting hole or on other approved working area. Throwing of pieces or cutoffs to the bundle is forbidden. For initiation it is necessary to use intact detonating cord and primer with minimal initiation capacity corresponding with that of reference detonator REF.DET.3.
Maximal quantity of the explosive contained in the detonating cord disposed is the same as maximal quantity of other explosive disposed in this place.

IX. Information on hazardous defects

No occurrence of hazardous defects is supposed at STARTLINE detonating cord.

X. Misfires disposal considerations

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

XI. Safety and health provisions

Safety and health provisions and first-aid measures 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

On air the detonating cord is little flammable. On burning of larger amount the transition can occur to detonation. In case of fire not to extinguish and evacuate persons to safe distance.

XIII. The data following from legislation

Detonating cords are covered with the Law No. 61/1988 of Coll., in the wording of later regulations, and the Decree coherent with this law.

Detonating cords are stipulated products according to the Law No. 90/2016 of Coll., in the wording of later regulations, and Government Order No. 97/2016 of Coll., in the wording of later regulations.

XIV. Physical and function parameters

STARTLINE detonating cord consists of the core, formed of pentrite or pentritole (pentrite with 10 % trinitrotoluene), with two guide plastic fibres going through. The core is wreathed with a foil and then with synthetic fibres in two or three layers. Finally, this way wreathed core is placed in thermoplastic cover. Free ends of the detonating cord are waterproof protected with metallic or plastic sleeves.

Appearance: detonating cord has the appearance of a cord, reeled on spools or rolled in rolls, of various colours corresponding with the product variant. For utilization in the Czech Republic the STARTLINE detonating cord is produced in the following colours:

Startline 6	red	Startline 20	yellow
Startline 10	yellow	Startline 40	orange
Startline 12	green	Startline 80	violet
Startline 15	blue	Startline 100	red

STARTLINE for export is produced in the colour required by the customer.

Basic technical specifications according to relevant TDV:

Quality parameter	SL 6	SL 10	SL 12	SL 15	SL 20	SL 40	SL 80	SL 100
Content of explosive ($g.m^{-1}$)	6,0 ±1,0	10,0 ± 1,5	12,0 ±2,0	15,0 ±2,0	20,0 ±2,5	40,0 ±4,0	80,0 ±8,0	100,0 ±10,0
Diameter (mm)	min. 3	4,7 ± 1,0	5,0 ±1,0	5,2 ±1,0	6,6 ±1,0	8,7 ±1,5	11,5 ±2,0	13,0 ±2,0
Detonation velocity ($m.s^{-1}$), min.	6000							
Loading resistance (kg), min.	50	60	60	60	70	75	75	75

Date of issue: 10.8.2017