

PBC Product Technical Specifications

TECHNICAL SPECIFICATIONS / POWDER FACTOR

Manufacturer: Nonex Systems Limited

Manufacturer Trademark: RockJack®

Product Registered Trade Name: Pyrotechnic Breaker Capsule / PBC

Classification	Articles Pyrotechnic for Technical Purposes
UN Number	0432
Hazard Classification (Storage & Transport)	1.4S
Hazard Type	HT-4
Charge type	Pyrotechnic mixture
CE Approval Number ID	CE - P2 - 69256806 / CE - P2 - 69256847
Product Type (EU Class)	P2 Gas Generator
Track & Trace	No Requirement
STORAGE	
Storing conditions	In original packaging UN Box, stable temp 10-30°C
Recommended humidity	<60%
Shelf Life	10 years
IGNITER SYSTEM	
Ignition type	Electrical (Not cap sensitive)
Electrical fusehead	Davey Bickford - 1038 A01
Booster	Black Powder
ELECTRICAL SPECIFICATIONS	
Fire current	1.35A (40 ms)
Max no fire energy	1.50mj / Ω
Resistance	Dependent on leg wire length. (See table)
Leg wire length	1m / 2m / 3m standard (4m to 15m on request)
Tensile strength of leg wire cable	95N / 9.5Kg
PRODUCT ENERGIES	
Energy	1500 cal/g (RWS 1.70 RBS 2.9)
Gas volume generated	Powder volume x 400
Velocity of deflagration (non confined)	135 seconds per metre (7.5mm/s)
Velocity of deflagration (confined)	500 - 800 ft/s 152 - 244 m/s
Maximum pressure (confined heavily stemmed)	550 Bar / 8000 psi
Maximum pressure (non confined in open air)	Atmospheric
Energy comparison to black powder	NONEX PBC = 6MJ/Kg. (Black powder = 3MJ/Kg)
GENERAL	
Bulk density	1.45g/cc
Diameter	28mm & 40mm
Safety distance (Generally 30m -100m)	To be ascertained for specific type of use & location
Waterproof	To 3m depth flooded shot hole
Permissible Explosive (Mining)	Naked Flame Coal and Mineral mines only
ENVIRONMENTAL	
Fume class	Undetermined
Gases generated	Carbon Monoxide/Carbon Dioxide/Water Vapour
Air overpressure	None
Vibration (PPV)	6.3 to 10 times lower than ANFO
Oxygen balance (Theoretical predicted value)	-27.8% (Comparison, TNT = -73.9%)
By product solid residue	Potassium Chloride/Magnesium Oxide/Iron (Trace: Silicon/Aluminium)
POWDER FACTOR **	
Benching	25 - 50 grams per cubic metre
Boulder / Block	5 - 15 grams per cubic metre
Reinforced concrete	50 - 100 grams per cubic metre
Trenching	50 - 100 grams per cubic metre
TRANSPORT	
Transport Category	Transport category TC-4 (Very low danger)
Tunnel restriction	Tunnel restriction E
Air Shipping	Cargo Aircraft Unlimited / Passenger Aircraft Limited

NONEX
Systems Ltd **RockJack**®

NONEX Systems Ltd
have successfully
served the UK
quarrying industry
for over 25
years.

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** Note: Powder factors are influenced by tensile strength of subject rock, generally the more tensile the rock the lower the charge, with less tensile rock requiring charges towards the higher end of figures above.