

MINPROEKT JSC, Bulgaria
Requirements for EN 13630 (explosives for civil uses – detonating cords and safety fuses)

EN	Facilities available	Equipment available	Know how available	Additional equipment needed	Additional know how needed	Recommendation
EN 13630-2:	Yes	Testing stand for thermal stability of detonating cord and safety fuse Data logger "Testo 177"	Yes	No	No	In house
EN 13630-3	Yes	Friction apparatus, porcelain peg and plates, movable carriage	Yes	No	No	In house
EN 13630-4	Yes	BAM fall-hammer for determination of sensitiveness to impact of explosives, Germany	Yes	No	No	In house
EN 13630-5	Yes	Abrasion test apparatus with rotor in string position	Yes	No	No	In house
EN 13630-6	Yes	Test apparatus for determination of resistance to tension	Yes	No	No	In house
EN 13630-7	Yes	Witness plates	Yes	No	No	In house
EN 13630-8	Yes	Tank of water, mans of supporting the test peace, weight for determination of resistance to water of detonating cords and safety fuses	Yes	No	No	In house
EN 13630-9	Yes	Steel measuring tape type ASSIST	Yes	No	No	In house
EN 13630-11	Yes	Frequency meter CNT 66/431, Sweden	Yes	No	No	In house
EN 13630-12	Yes	Climatic conditioning chamber; supporting device, steel tube, Stopwatch	Yes	No	No	In house
Requirements for EN 13631 (explosives for civil uses)						
EN 13631-2	Yes	Testing stand for thermal stability explosives Data logger "Testo 177"	Yes	No	No	In house
EN 13631-3	Yes	Friction apparatus, porcelain peg and plates, movable carriage	Yes	No	No	In house
EN 13631-4	Yes	BAM fall-hammer for determination of sensitiveness to impact of explosives, Germany	Yes	No	No	In house
EN 13631-5	Yes	V-shaped guide, pin, water tanks, witness plates for determination of resistance to water	Yes	No	No	In house
EN 13631-6	Yes	Pressure system, firing tubes, witness sistem, Pressure gauges, Digital thermometer	Yes	No	No	In house
EN 13631-7	Yes	Refrigerator up to minus 35°C with 450 l capacity Heating chamber up to 250°C, Digital thermometer, Thermally insulated container	Yes	No	No	In house
EN 13631-10	Yes	Steel measuring tape type ASSIST	Yes	No		In house

EN 13631-11	Yes	Support, steel tubes, steel measuring tape type ASSIST	Yes	No		In house
EN 13631-12	Yes	Electronic technical balance OWALABOR	Yes	No		In house
EN 13631-13	Yes	Electronic technical balance OWALABOR, tank, thermometer, measuring cylinder	Yes	No		In house
EN 13631-14	Yes	Frequency meter CNT 66/431, steel tubes, thermometer	Yes	No	No	In house
EN 13631-15	Yes	No needed	Yes	No	No	In house
EN 13631-16 Applied standard BDS	No		Yes	Yes	Yes	
	Yes	Analytical balance SART• RIUS,• -200S, Spectrophotometer "Specol"10 for NOx gases, apparatuses for determination of quality of CO and CO ₂ gases Thick-walled "bomb" for determining the toxic gases of explosives with 30 l capacity				In house
Requirements for EN 13631 (explosives for civil uses – detonator and relays)						
EN 13763-2	Yes	Heating chamber "				In house
EN 13763-3	Yes	BAM fall-hammer, Drop Hammer, Drop weight	Yes	No	No	In house
EN 13763-4	Yes	Testing stand for determination of resistance to abrasion	Yes	Holding devise for leading wears and shock tubes	No	Outsource
EN 13763-5	No		Yes	Testing stand for determination of resistance to cutting damage of leading wires and shock tubes	No	Outsource
EN 13763-6	No	Refrigerator up to minus 35°C with 450 l capacity	Yes	Yes	No	Outsource
EN 13763-7	No	Testing stand for static and dynamic loading according to BDS	Yes	Testing stand for determination of the mechanical strength of leading wires, shock tubes, connections, crimps and closures	No	Outsource
EN 13763-8	No	Test apparatus for determination of the vibration according to BDS	Yes	Yes	Yes	Outsource
EN 13763-9	No		No	Yes	Yes	Outsource
EN 13763-11	No		Yes	Yes	No	Outsource
EN 13763-12	Yes	Apparatuses, available to make hydrostatic pressure up to 1 MPa Tank for testing the water resistance of explosives up to 2.5 m water column.	Yes	No	No	In house
EN 13763-13	No	Kilovoltmeter 196, 0-30 kV Testing stand for ED static electricity according BDS	Yes	Yes	Yes	Outsource
EN 13763-15	No		Yes	Yes	No	Outsource

EN 13763-16	Yes	Stand for determining the electrical parameters of el. Detonators, Oscilloscope TEKTRONIX according BDS	Yes	No	No	In house
EN 13763-17	Yes	Stand for determining the electrical parameters of el. Detonators, Oscilloscope TEKTRONIX Multimeter, Unigor 355	Yes	Yes	Yes	Outsource
EN 13763-18	No	Stand for determining the electrical parameters of el. Detonators, Oscilloscope TEKTRONIX	Yes	Yes	Yes	Outsource
EN 13763-19	No	Stand for determining the electrical parameters of el. Detonators, Oscilloscope TEKTRONIX	Yes	Yes	Yes	Outsource
EN 13763-20	Yes	Stand for determining the electrical parameters of el. Detonators, ohmmeter	Yes	No	No	In house
EN 13763-21	No	Testing stand for ED static electricity according BDS	Yes	Yes	Yes	Outsource
EN 13763-22	No	Test apparatus according BDS	Yes	Yes	Yes	Outsource
EN 13763-23	Yes	Testing stand for determination of the shock-wave velocity of shock tube Oscilloscope TEKTRONIX	Yes	No	No	In house
EN 13763-24	No		Yes	Yes	Yes	Outsource
EN 13763-25	No				Yes	Outsource