OSHA Subpart U:
Blasting and the Use of Explosives
Blasting – General Provisions

1926.900(a) The employer shall permit only authorized and qualified persons to handle and use explosives.

1926.900(b) Smoking, firearms, matches, open flame lamps, and other fires, flame or heat producing devices and sparks shall be prohibited in or near explosive magazines or while explosives are being handled, transported or used.

1926.900(c) No person shall be allowed to handle or use explosives while under the influence of intoxicating liquors, narcotics, or other dangerous drugs.

1926.900(d) All explosives shall be accounted for at all times. Explosives not being used shall be kept in a locked magazine, unavailable to persons not authorized to handle them. The employer shall maintain an inventory and use record of all explosives. Appropriate authorities shall be notified of any loss, theft, or unauthorized entry into a magazine.
1926.900(h) When blasting is done in congested areas or in proximity to a structure, railway, or highway, or any other installation that may be damaged, the blaster shall take special precautions in the loading, delaying, initiation, and confinement of each blast with mats or other methods so as to control the throw of fragments, and thus prevent bodily injury to employees.

1926.900(j) Insofar as possible, blasting operations above ground shall be conducted between sunup and sundown.
1926.900(k) Due precautions shall be taken to prevent accidental discharge of electric blasting caps from current induced by radar, radio transmitters, lightning, adjacent power lines, dust storms, or other sources of extraneous electricity. These precautions shall include:

1926.900(k)(1) Detonators shall be short-circuited in holes which have been primed and shunted until wired into the blasting circuit.

1926.900(k)(2) The suspension of all blasting operations and removal of persons from the blasting area during the approach and progress of an electric storm.
1926.900(o) Blasting operations in the proximity of overhead power lines, communication lines, utility services, or other services and structures shall not be carried on until the operators and/or owners have been notified and measures for safe control have been taken.

1926.900(r) All blasts shall be fired electrically with an electric blasting machine or properly designed electric power source, except as provided in 1926.906 (a) and (r).
1926.900(s)(1) Buildings shall be of noncombustible construction or sheet metal on wood studs.

1926.900(s)(2) Floors in a mixing plant shall be of concrete or of other nonabsorbent materials.

1926.900(s)(3) All fuel oil storage facilities shall be separated from the mixing plant and located in such a manner that in case of tank rupture, the oil will drain away from the mixing plant building.

1926.900(s)(4) The building shall be well ventilated
Storage Of Explosives And Blasting Agents

1926.904(b) Blasting caps, electric blasting caps, detonating primers, and primed cartridges shall not be stored in the same magazine with other explosives or blasting agents.

1926.904(c) Smoking and open flames shall not be permitted within 50 feet of explosives and detonator storage magazine
Loading Of Explosives Or Blasting Agents

1926.905(c) Tamping shall be done only with wood rods or plastic tamping poles without exposed metal parts, but non-sparking metal connectors may be used for jointed poles. Violent tamping shall be avoided. The primer shall never be tamped.

1926.905(d) No holes shall be loaded except those to be fired in the next round of blasting. After loading, all remaining explosives and detonators shall be immediately returned to an authorized magazine.

1926.905(e) Drilling shall not be started until all remaining butts of old holes are examined for unexploded charges, and if any are found, they shall be re-fired before work proceeds.

1926.905(f) No person shall be allowed to deepen drill holes which have contained explosives or blasting agents
1926.905(h) Machines and all tools not used for loading explosives into bore holes shall be removed from the immediate location of holes before explosives are delivered. Equipment shall not be operated within 50 feet of loaded holes.

1926.905(k) Holes shall be checked prior to loading to determine depth and conditions. Where a hole has been loaded with explosives but the explosives have failed to detonate, there shall be no drilling within 50 feet of the hole.

1926.905(o) All blast holes in open work shall be stemmed to the collar or to a point which will confine the charge.
Blasting

Serial and Parallel Blasting

Free Face
Delay Blasting

Firing of first delay
Delay Blasting

Firing of second delay
Delay Blasting

Firing of third delay
Initiation Of Explosive Charges-Electric Blasting

1926.906(c) In any single blast using electric blasting caps, all caps shall be of the same style or function, and of the same manufacture.

1926.906(d) Electric blasting shall be carried out by using blasting circuits or power circuits in accordance with the electric blasting cap manufacturer's recommendations, or an approved contractor or his designated representative.

1926.906(e) When firing a circuit of electric blasting caps, care must be exercised to ensure that an adequate quantity of delivered current is available, in accordance with the manufacturer's recommendations.
Firing the Blast

1926.909(b) Before a blast is fired, a loud warning signal shall be given by the blaster in charge, who has made certain that all surplus explosives are in a safe place and all employees, vehicles, and equipment are at a safe distance, or under sufficient cover.

1926.909(c) Flagmen shall be safely stationed on highways which pass through the danger zone so as to stop traffic during blasting operations.

1926.909(e) Before firing an underground blast, warning shall be given, and all possible entries into the blasting area, and any entrances to any working place where a drift, raise, or other opening is about to hole through, shall be carefully guarded. The blaster shall make sure that all employees are out of the blast area before firing a blast.
Inspection After Blasting

1926.910(a) Immediately after the blast has been fired, the firing line shall be disconnected from the blasting machine, or where power switches are used, they shall be locked open or in the off position.

1926.910(b) Sufficient time shall be allowed, not less than 15 minutes in tunnels, for the smoke and fumes to leave the blasted area before returning to the shot. An inspection of the area and the surrounding rubble shall be made by the blaster to determine if all charges have been exploded before employees are allowed to return to the operation, and in tunnels, after the muck pile has been wetted down.
Dealing With Misfires

1926.911(b) No other work shall be done except that necessary to remove the hazard of the misfire and only those employees necessary to do the work shall remain in the danger zone.

1926.911(c) No attempt shall be made to extract explosives from any charged or misfired hole; a new primer shall be put in and the hole re-blasted. If re-firing of the misfired hole presents a hazard, the explosives may be removed by washing out with water or, where the misfire is under water, blown out with air.
1926.911(d) If there are any misfires while using cap and fuse, all employees shall remain away from the charge for at least 1 hour. Misfires shall be handled under the direction of the person in charge of the blasting. All wires shall be carefully traced and a search made for unexploded charges.

1926.911(e) No drilling, digging, or picking shall be permitted until all missed holes have been detonated or the authorized representative has approved that work can proceed.