

## SECTION E — FIXED CONSTRUCTIONS

## E21 EARTH OR ROCK DRILLING; MINING

## E21F SAFETY DEVICES, TRANSPORT, FILLING-UP, RESCUE, VENTILATION, OR DRAINAGE IN OR OF MINES OR TUNNELS [2]

Subclass index

VENTILATION.....	1/00, 3/00
DRAINAGE.....	16/00
SAFETY DEVICES, RESCUE DEVICES.....	5/00-11/00
TRANSPORT; FILLING-UP.....	13/00, 15/00
OTHER METHODS OR DEVICES.....	17/00

Ventilation of mines or tunnels

- 1/00 Ventilation of mines or tunnels; Distribution of ventilating currents** (ventilating rooms or spaces in general F24F) [2]
- 1/02 • Test models (analogue computers therefor G06G 7/50)
- 1/04 • Air ducts (suspension devices E21F 17/02)
- 1/06 • • Duct connections (tube connections in general F16L)
- 1/08 • Ventilation arrangements in connection with air ducts, e.g. arrangements for mounting ventilators (ventilators *per se* F04D)
- 1/10 • Air doors (doors in general E06B)
- 1/12 • • Devices for automatically opening air doors
- 1/14 • Air partitions; Air locks (dams E21F 17/103; air locks for foundations E02D) [6]
- 1/16 • Shaft covers
- 1/18 • Gravity-flow ventilation (E21F 1/02-E21F 1/16 take precedence) [2]
- 3/00 Cooling or drying of air** (air-conditioning rooms or spaces in general F24F)

Safety devices; Rescue devices

- 5/00 Means or methods for preventing, binding, depositing or removing dust; Preventing explosions or fires** (dams E21F 17/103; applying liquids or other fluent materials to surfaces in general B05; flue-gas indicators G01N) [6]
- 5/02 • by wetting or spraying
- 5/04 • • Spraying barriers (spray nipples, spraying in general B05B, B05D; picks with arrangement of fluid-spraying nozzles E21C 35/187)
- 5/06 • • Fluids used for spraying
- 5/08 • Rock dusting; Depositing other protective substances
- 5/10 • • Devices for rock dusting
- 5/12 • • Composition of rock dust
- 5/14 • Fluid barriers or rock dusters made to work by, or at the same time as, shots or explosions

- 5/16 • Layers of hygroscopic or other salts deposited on floors, walls, or the like, for binding dust; Deposition of such layers (dust-absorbing materials in general C09K 3/22)
- 5/18 • Impregnating walls, or the like, with liquids for binding dust
- 5/20 • Drawing-off or depositing dust (methods or apparatus for flushing boreholes E21B 21/00; while slitting E21C 35/22) [1, 7]
- 7/00 Methods or devices for drawing-off gases with or without subsequent use of the gas for any purpose**
- 9/00 Devices preventing sparking of machines or apparatus** (preventing sparking of electric machines or apparatus H01K, H02K)
- 11/00 Rescue devices or other safety devices, e.g. safety chambers, escape ways** (breathing aids for curative purposes A61H 31/00; respiratory apparatus A62B 7/00; revival apparatus A62B 33/00)
- 13/00 Transport specially adapted to underground conditions** (mine cars B61D; transport in general, loading B65G)
- 13/02 • in galleries
- 13/04 • in gravity inclines; in staple or inclined shafts
- 13/06 • at or adjacent to the working face
- 13/08 • Shifting conveyers or other transport devices from one location at the working face to another (guiding mining machines along conveyers for the cut mineral E21C 35/12; in combination with mine roof supports for step-by-step movement E21D 23/00)
- 13/10 • Anchorings for conveyers [2]

- 15/00 Methods or devices for placing filling-up materials in underground workings** (dams E21F 17/103) [6]
- 15/02 • Supporting means, e.g. shuttering, for filling-up materials
- 15/04 • • Stowing mats; Goaf wire netting; Partition walls
- 15/06 • Filling-up mechanically

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- 15/08 • Filling-up hydraulically or pneumatically (hydraulic or pneumatic transport devices B65G; pipes, pipe couplings F16L)
- 15/10 • • Hydraulic or pneumatic filling-up machines
- 16/00 Drainage** (keeping dry foundation sites or other areas in the ground E02D 19/00) **[2]**
- 16/02 • of tunnels **[2]**
- 17/00 Methods or devices for use in mines or tunnels, not covered elsewhere** (mine lighting F21, H05B) **[2]**
- 17/02 • Suspension devices for tubes or the like, e.g. for ventilating ducts (supporting pipes, cables or protective tubing in general F16L 3/00-F16L 7/00)
- 17/04 • Distributing means for power supply **[2]**
- 17/06 • • Distributing electric power; Cable networks; Conduits for cables (circuit arrangements for supplying or distributing electric power in general H02J)
- 17/08 • • Distributing hydraulic power; Pipe networks for hydraulic liquid (pipe-line systems in general F17D)
- 17/10 • • Distributing pneumatic power; Pipe networks for compressed air (pipe-line systems in general F17D)
- 17/103 • Dams, e.g. for ventilation **[6]**
- 17/107 • • inflatable **[6]**
- 17/12 • • Dam doors
- 17/16 • Modification of mine passages or chambers for storage purposes, especially for liquids or gases (storing fluids in natural or artificial cavities or chambers in the earth B65G 5/00)
- 17/18 • Special adaptations of signalling or alarm devices (for elevators, escalators or moving walkways B66B; gas-sensitive devices per se G01N)