

## MINES

The beginning of the present General Orders on Mines was a set of general orders on zinc mines which became effective January 4, 1915. These orders, however, did not cover all of the hazards encountered in mining operations nor were they applicable to iron mining.

A complete set of orders was published March 31, 1922, and became effective May 1, 1922.

The advisory committee was reorganized in 1937 and the existing orders were completely revised. The revised orders were published September 25, 1937, and became effective October 25, 1937. They are available in pamphlet form.

The order numbers and captions are given below:

Order	Order
300	Scope
301	Construction of Orders
302	Definitions
304	Care of the Injured
305	Ventilation
306	General Safety Precautions
307	Safety Bulletin Boards
308	Orders for Underground Men
309	Inspection
310	Shafts
311	Two Openings to Surface
312	Fire Protection
313	Flammable Material
314	Ladders and Ladderways
315	Hoisting Equipment
316	Cages for Hoisting Men
317	Whims and Hand Operated Windlasses
318	Hoisting Practice
319	Hoisting While Sinking Shaft
320	Hoisting Ropes
321	Hoisting Signal System
322	Hoisting Signals
323	Hoisting Engineers
324	Duties of Hoisting Engineer
325	Storage, Transportation and Use of Explosives Above Ground
326	Storage, Handling and Use of Explosives Underground
327	Blasting Caps, Fuse and Primers
328	Blasting
329	Electric Blasting
330	Sanitation
331	Illumination
333	Protection Against Water
334	Timbering
335	Winzes, Raises and Openings
336	Haulage
337	Dump Tracks
338	Maps

## QUARRIES AND PITS

The first quarry safety code became effective January 7, 1922. These orders were drafted by a committee composed of practical quarry operators and representatives of organized labor. After several years' experience with these orders a revision was considered necessary and the old committee was reorganized to make recommendations. The revised orders were published December 5, 1929 and became effective January 4, 1930. Most of the old orders were retained or amended in the revision but were renumbered to permit proper grouping to fit in with the different phases of quarry operation. Orders 358, 360 and 361 became effective January 7, 1922.

In addition to these orders the bulletin (which may be obtained from the commission) has an appendix that contains a number of recommendations for the guidance of quarry workers in safe practices.

The order numbers and captions are as follows:

Order	Order
358	Construction of Orders
360	Definitions
361	General Safety Precautions
362	Bulletin Boards
363	Care of the Injured
364	Tunnels in Quarries
365	Superintendents
366	Inspection at the Face of the Quarry
368	Sand and Gravel Excavations
369	Overburden
370	Hoisting Apparatus and Derricks
371	Cables, Standards
372	Cable Sheaves
373	Hoisting Men
374	Hoisting Loads
375	Hoisted Material
377	Quarry Cars and Haulage
378	Elevated Spur Tracks
380	Quarry Stairs and Ladders
381	Passageways

## ELEVATOR CODE

The original elevator code became effective in February, 1913, having been drafted and recommended by the general committee on safety and sanitation which was created by the industrial commission shortly after its organization in 1911 assisted by a subcommittee composed of practical elevator men. This original code was extensively revised in 1917 by an advisory elevator code committee. The entire code was revised in 1926 and further amendments were adopted in 1928 and 1930.

A complete revision of the elevator code to meet the developments in the elevator industry, became effective September 8, 1944, and is available in pamphlet form by application to the Industrial Commission.

The orders of this code are identified by numbers and captions as follows:

Order	Order
400	Definitions
401	General Scope
402	Renewing of Elevators, Dumbwaiters and Escalators
403	Exemptions
404	Plans, New Installations
405	Inspection by Insurance Companies
406	Inspection by Cities
407	Inspection Fees
408	Tests and Inspections, New Installations
410	Hoistway Enclosures, New Installations
412	Guarding Hoistway Enclosures, New and Existing Installations
413	Combined Stairways and Elevator Hoistway Enclosures, New and Existing Installations
414	Guards for Outside Windows in Hoistways, New and Existing Installations
415	Guards for Projections in Hoistways
416	Car Clearances, New Installations
417	Depth of Pit and Overhead Clearance, New Installations
418	Construction of Pits
419	Buffers, New Installations
420	Hoistways, Penthouses, Machine Rooms and Pits Unobstructed, New and Existing Installations
421	Machine Rooms, Penthouses, where Required, New Installations
422	Construction of Machine Rooms and Penthouses

Order	
423	Overhead Floors and Machinery Supports. New and Existing Installations
424	Floors and Screens under Sheaves. New and Existing Installations
425	Guards for Counterweight Runways. New and Existing Installations
426	Spreader Brackets and Counterweight Stops
427	Construction of Cars. New Installations
428	Passenger Elevator—Car Enclosure
429	Passenger Elevator—Car Furnishings. New and Existing Installations
430	Passenger Elevator—Car Door or Gate
431	Passenger Elevator—Hoistway Landing Doors
432	Passenger Elevator—Hoistway Landing Door Interlocks
433	Passenger Elevator Landings. New Installations
434	Freight Elevator—Car Enclosure
435	Freight Elevator—Car Entrances. New and Existing Installations
436	Freight Elevator—Car Doors or Gates
437	Freight Elevator Hoistway Landing Doors or Gates
438	Freight Elevator Hoistway Landing Doors or Gates; Construction
439	Freight Elevator Landings. New Installations
440	Power Freight Elevator Hoistway Landing Doors and Gates; Locking Devices
441	Factors of Safety for Cables. New and Existing Installations
442	Cable Data
443	Renewing of Cables. New and Existing Installations
444	Number and Size of Cables Required
445	Cable Guards for Sheaves and Idlers
446	Cable Terminal Fastenings and Turns Required on Drums
447	Governor Cables
448	Drum and Car Counterweights
449	Counterweight Cables. New Installations
450	Protection of Counterweight Cables. New and Existing Installations
451	Bolting of Counterweights. New Installations
452	Capacities and Loadings for Passenger Elevators
453	Capacity Plates. New and Existing Installations
454	Stresses allowed in Design. New Installations
455	Guide Rails. General Requirements
456	Sizes and Construction of Guide Rails. New Installations
457	Fastenings of Guide Rails. New Installations
458	Minimum Sizes of Drums and Sheaves. New Installations
459	Machinery. General Requirements
460	Prohibited Installations
461	Power Attachments to Hand Elevators. New and Existing Installations
462	Slack Cable Devices
463	Limit Stops. New and Existing Installations
464	Car Safety Devices and Speed Governors
465	Brakes
466	Stop Balls for Hand Ropes
467	Guards for Hand Cable Sheaves and Idlers
468	Centering Ropes
469	Warning Chains. New and Existing Installations
470	Control Mechanism
471	Automatic and Continuous Pressure Operation Elevators. New and Existing Installations
472	Electrical Protection
473	Switches and Wiring
474	Grounding
475	Signal Systems. New and Existing Installations
476	Lighting
477	Operation of Elevators
478	Maintenance. New and Existing Installations
479	Dumbwaiters
480	Sidewalk Elevators
481	Freight Elevator of the Sidewalk Type
482	Hand Elevators. Hand Hospital Elevators and Hand Invalid Lifts. Special Requirements
483	Stage Elevators
485	Hydraulic Elevators. Construction and General requirements. New and Existing Installations
486	Safety Equipment. New and Existing Installations
487	Plunger Type Elevators. New Installations
488	Maintenance

## Order

489	Recabling Hydraulic Elevators
490	Construction of Escalators
491	Safety Requirements for Escalators
492	Escalator Tests

### TUNNEL, CAISSON AND TRENCH CONSTRUCTION CODE

A bill was introduced in the 1927 session of the legislature relating to work in compressed air. The legislative committee to whom the bill was referred recommended that instead of enacting a law upon this subject the industrial commission should issue orders governing tunnel and caisson work. Pursuant to this recommendation, the commission organized an advisory committee composed of representatives of the employers and employes in the industries affected and of several physicians and construction engineers. This committee held nine meetings, spread over a period of nearly two years and then with the commission conducted four public hearings on the proposed orders in different sections of the state. The committee held two further meetings, then made final recommendations to the commission. The orders after adoption were published January 20, 1930 and became effective February 19, 1930.

Recognizing the need for more detailed specifications for tunnel and trench timbering, the advisory committee in 1935 was requested to consider amendments. After several meetings, proposed changes were presented to the commission for adoption. The revised orders were published May 20, 1936 and became effective June 19, 1936.

Experience in the enforcement of these orders demonstrated the need for additional orders. The committee was reorganized in 1939 and after nine meetings submitted its recommendations to the commission. Five public hearings were held in different sections of the state and after subsequent advisory committee action the proposed changes were adopted by the commission on January 31, 1939. They were published on February 9, 1940 and became effective March 10, 1940.

These general orders which are available in a separate pamphlet include, besides the text of the orders, illustrations showing the required timber sections for tunnels, shafts and trenches. Suggestions for the guidance of compressed air workers and forms to be used by physicians in reports upon examinations of compressed air workers and reports of caisson disease are also included.

The order numbers and captions are as follows:

Order	Effective
600	Scope
601	Definitions
602	Inspections
603	Care of the Injured
604	Fire Protection
605	Flammable Material
606	Lighting
607	Electrical Equipment