ISO Standards for use in the Mining and Minerals industry







ISO 13545

ISO 13546

ISO 13547

ISO 13658

ISO 15247

ISO 15661

ISO 721

ISO 722

ISO 723

ISO 1717

ISO 1718

ISO 1721

ISO 1722

ISO 3551

ISO 3552

ISO 6805

ISO 8866

ISO 10097

ISO 10098

ISO 10207

ISO 10208

ISO 18758

ISO 19224

ISO 610

ISO 9044

ISO 9045

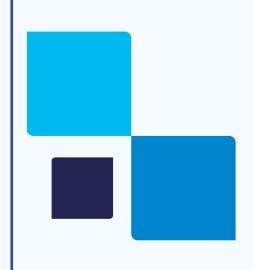
ISO 10630

ISO 10752

ISO 10753

ISO 14315

Committed to Build a Better **Future**



ISO 9001 (Quality) ISO 14001 (Environmental) ISO 45001 (Health and Safety)

This poster includes over 250 standards that apply to mining and minerals focusing on some of the more prominent documents that cover mining and quarrying, coals, metalliferous minerals and their concentrates. non-metalliferous minerals. mining equipment and equipment for processing

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Some standards titles are

of minerals.

summarized.



ISO 4657

ISO 18871

ISO 18875 ISO 19426

ISO 19434

ISO 20305 ISO 21795

ISO 22932

ISO 23664

ISO 23872 ISO 23875

ISO 24419

ISO 157 ISO 334

ISO 349

ISO 501 ISO 502

ISO 540 ISO 562 ISO 589

ISO 602

ISO 609

ISO 625

ISO 647

ISO 1213

ISO 1953

ISO 5073 ISO 5074

ISO 7936

ISO 8264

ISO 8833

ISO 8858

ISO 9931

ISO 10086

ISO 10329

ISO 11723

ISO 11724

ISO 18283

ISO 23380

ISO 23499

ISO 23604

ISO 29541

hydrochloric acid

Hard coal — Size analysis by sieving

total moisture content and tar yield

Mining and quarrying
Assessment specification of coalbed methane resources
Method of determining coalbed methane content
Coalbed methane exploration and development
Structures for mine shafts
Classification of mine accidents
Mine closure and reclamation
Mine closure and reclamation planning
Mining Vocabulary
Traceability of rare earths in the supply chain from mine to separated
products
Mining Underground structures
Air quality control systems for operator enclosures
Mine closure and reclamation
Coals
Coal — Determination of forms of sulfur
Coal and coke — Determination of total sulfur — Eschka method
Hard coal — Audibert-Arnu dilatometer test
Hard coal — Determination of the crucible swelling number
Coal — Determination of caking power — Gray-King coke test
Hard coal and coke — Determination of ash fusibility
Hard coal and coke — Determination of volatile matter
Hard coal — Determination of total moisture
Coal — Determination of mineral matter
Solid mineral fuels — Determination of carbon and hydrogen
High temperature combustion method
Solid mineral fuels — Determination of carbon and hydrogen
Liebig method

Brown coals and lignites — Determination of the yields of tar, water, gas and coke residue Brown coals and lignites — Determination of yield of benzene Brown coals and lignites — Determination of acetone–soluble material in the benzene-soluble extract Coal — Determination of moisture-holding capacity Coal and coke — Calculation of analyses to different bases Coal and coke — Vocabulary Solid mineral fuels —Determination of extractable metals in dilute

Coal — Determination of the thermal stability and thermal fragmentation Coal — Determination of carboxyreactivity Hard Coal — Determination of plastometric indices Brown coals and lignites — Determination of moisture content Brown coals and lignites — Determination of the volatile matter in the analysis sample Brown coals and lignites — Determination of true relative density and apparent relative density Brown coals and lignites — Determination of humic acids Hard coal — Determination of Hardgrove grindability index

ISO 13311

ISO 13312

ISO 13313

ISO 13930

ISO 15633

ISO 15634

Methods for the petrographic analysis of coals Coal — Determination and presentation of float and sink characteristics Hard coal — Determination of the swelling properties using a dilatometer Magnetite for use in coal preparation Hard coal — Froth flotation testing

Brown coals and lignites —Classification by types on the basis of

Coal — Sampling of pulverized coal conveyed by gases in direct fired Coal — Methods for evaluating flocculants for use in coal preparation

Coal — Determination of plastic properties Solid mineral fuels — Hard coal — Determination of moisture Solid mineral fuels — Determination of arsenic and selenium Solid mineral fuels — Determination of total fluorine in coal, coke and fly

Classification of coals ISO 11760 ISO 12900 Hard coal — Determination of abrasiveness ISO 13605 Solid mineral fuels — Major and minor elements in coal ash and coke

Coal and coke — Manual sampling

ISO 13909 Hard coal and coke — Mechanical sampling ISO 14180 Coal — Guidance on the sampling of coal seams ISO 15117 Coal flow properties Solid mineral fuels — Determination of total mercury content of coal

ISO 15237 ISO 15238 Solid mineral fuels — Determination of total cadmium content of coal Hard coal — Determination of caking index ISO 17246 Coal — Proximate analysis ISO 17247 Coal and coke — Ultimate analysis

ISO 20360 Brown coals and lignites — Determination of the volatile matter ISO/TS 2036 Hard coal — Determination of plastometric indices ISO 20904 Hard coal — Sampling of slurries ISO 20905 Coal preparation — Determination of dust/moisture relationship for coal ISO 21398 Hard coal and coke — Guidance to the inspection of mechanical

Solid mineral fuels — Determination of sulfur by IR spectrometry

sampling systems Coal — Selection of methods for the determination of trace elements Coal — Determination of bulk density for the use in charging of coke

Method of determining specific surface area of coal Hard coal — Method for the measurement of the swelling of hard coal using a dilatometer Solid mineral fuels — Determination of total carbon, hydrogen and

	Firon ores
ISO 2596	Iron ores — Determination of hygroscopic moisture in analytical samples
ISO 2597	Iron ores — Determination of total iron content
ISO 2598	Iron ores — Determination of silicon content
ISO 2599 ISO 3082	Iron ores — Determination of phosphorus content Iron ores — Sampling and sample preparation procedures
ISO 3084	Iron ores — Experimental methods for evaluation of quality variation
ISO 3085	Iron ores — Experimental methods for checking the precision of sampling
ISO 3086	Iron ores — Experimental methods for checking the bias of sampling
ISO 3087	Iron ores — Determination of the moisture content of a lot
ISO 3271	Iron ores for blast furnace and direct reduction feedstocks — Determination of the tumble and abrasion indices
ISO 3852	Iron ores for blast furnace and direct reduction feedstocks — Determination of bulk density
ISO 4687	Iron ores — Determination of phosphorus content
ISO/TR 4688	Iron ores — Determination of aluminium
ISO 4689	Iron ores — Determination of sulfur content
ISO 4691	Iron ores — Determination of titanium
ISO 4694	Iron ores — Determination of fluorine content
ISO 4695	Iron ores for blast furnace feedstocks — Determination of the reducibility by the rate of reduction index
ISO 4696	Iron ores for blast furnace feedstocks — Determination of low-temperature
	reduction-disintegration indices by static method
ISO 4698	Iron ore pellets for blast furnace feedstocks — Determination of the free swelling index
ISO 4700	Iron ore pellets for blast furnace and direct reduction feedstocks
	Determination of the crushing strength
ISO 4701	Iron ores and direct reduced iron — Determination of size distribution by
ISO 5416	sieving Direct reduced iron — Determination of metallic iron
ISO 5418	Iron ores — Determination of copper
ISO 6830	Iron ores — Determination of aluminium content
ISO 7215	Iron ores for blast furnace feedstocks — Determination of the reducibility
	by the final degree of reduction index
ISO 7335	Iron ores — Determination of combined water content
ISO 7764	Iron ores — Preparation of predried test samples for chemical analysis
ISO 7834	Iron ores — Determination of arsenic content
ISO 7992	Iron ores for blast furnace feedstocks — Determination of reduction under load
ISO 8263	Iron ore fines $-$ Method for presentation of the results of sintering tests
ISO 8371	Iron ores for blast furnace feedstocks — Determination of the decrepitation index
ISO 9035	Iron ores — Determination of acid-soluble iron(II) content
ISO 9516	Iron ores — Determination of various elements by X-ray fluorescence
	spectrometry
ISO 9517	Iron ores — Determination of water-soluble chloride
ISO 9682	Iron ores — Determination of manganese content
ISO 9683	Iron ores — Determination of vanadium
ISO 9685	Iron ores — Determination of nickel and/or chromium contents
ISO/TR 9686	Direct reduced iron — Determination of carbon and/or sulfur
ISO 10203	Iron ores — Determination of calcium
ISO 10204 ISO 10835	Iron ores — Determination of magnesium Direct reduced iron and hot briquetted iron — Sampling and sample
100 10005	preparation
ISO 11256	Iron ore pellets for shaft direct–reduction feedstocks — Determination of
ISO 11257	the clustering index Iron ores for shaft direct-reduction feedstocks — Determination of the
	degree of metallization
ISO 11258	Iron ores for shaft direct-reduction feedstocks — Determination of the
ISO 11323	reducibility index Iron ore and direct reduced iron — Vocabulary
ISO/TR 11422	Iron ores — Recommended procedures for iron ore dissolution using
.00/////////	either acid digestion or alkali fusion
ISO 11459	Iron ores — Certified reference materials
ISO 11533	Iron ores — Determination of cobalt
ISO 11534	Iron ores — Determination of tin
ISO 11535	Iron ores — Determination of various elements
ISO 11536	Iron ores — Determination of loss on ignition
ISO 13310	Iron ores — Determination of zinc content

Iron ores — Determination of lead content

reduction-disintegration indices by dynamic method

Iron ores — Determination of chromium content

Iron ores — Determination of metallic iron content

ISO/TR 18231 Iron ores — Wavelength dispersive X–ray fluorescence spectrometers

Iron ores — Determination of total iron content using the EDTA

ISO/TR 18336 Guidelines for good XRF laboratory practice for the iron ore industry

Iron ores — Determination of specific surface area

Iron ores — Determination of arsenic content

Iron ores — Determination of trace elements

Iron ores for blast furnace feedstocks — Determination of low-temperature

Direct reduced iron — Determination of the tumble and abrasion indices

Iron ores — Guidelines for the use of certified reference materials (CRMs)

Direct reduced iron — Determination of apparent density and water

Iron ores — Determination of potassium

Iron ores — Determination of sodium

Iron ores — Determination of nickel

absorption of hot briquetted iron (HBI)

of hot briquetted iron (HBI)

ISO/TR 16043 Iron ores — Determination of chlorine content

ISO/TR 18230 Iron ores — Determination of loss on ignition

photometric titration method

Iron ores — Sampling of slurries

	Manganese ores
ISO 310	Manganese ores and concentrates — Determination of hygroscopic moisture
	content in analytical samples
ISO 312	Manganese ores — Determination of active oxygen content, expressed as
	manganese dioxide
ISO 315	Manganese ores and concentrates — Determination of nickel content
ISO 317	Manganese ores and concentrates — Determination of arsenic content
ISO 320	Manganese ores — Determination of sulphur content
ISO 548	Manganese ores — Determination of barium oxide content
ISO 549	Manganese ores — Determination of combined water content
ISO 619	Manganese ores — Determination of chromium content
ISO 4293	Manganese ores and concentrates — Determination of phosphorus content
ISO 4295	Manganese ores and concentrates — Determination of aluminium content
ISO 4296	Manganese ores — Sampling
ISO 4297	Manganese ores and concentrates — Methods of chemical analysis
ISO 4298	Manganese ores and concentrates — Determination of manganese content
ISO 4299	Manganese ores — Determination of moisture content
ISO 4571	Manganese ores and concentrates — Determination of potassium and
	sodium content
ISO 5889	Manganese ores and concentrates — Determination of aluminium, copper,
	lead and zinc contents
ISO 5890	Manganese ores and concentrates — Determination of silicon content
ISO 6230	Manganese ores — Determination of size distribution by sieving
ISO 6233	Manganese ores and concentrates — Determination of calcium and
	magnesium contents
ISO 7723	Manganese ores and concentrates — Determination of titanium content
ISO 7953	Manganese ores and concentrates — Determination of calcium and
	magnesium contents
ISO 7969	Manganese ores and concentrates — Determination of sodium and
	potassium contents
ISO 7990	Manganese ores and concentrates — Determination of total iron content
ISO 8530	Manganese and chromium ores — Experimental methods for checking the
100 0504	precision of sample division
ISO 8531	Manganese and chromium ores — Experimental methods for checking the
100 0544	precision of moisture determination
ISO 8541	Manganese and chromium ores — Experimental methods for checking the bias of sampling and sample preparation
ISO 8542	Manganese and chromium ores — Experimental methods for evaluation of
130 6542	quality variation and methods for checking the precision of sampling
ISO 9292	Manganese ores and concentrates — Determination of total iron content
100 9292	1,10 Phenanthroline spectrometric method
ISO 9681	Manganese ores and concentrates — Determination of iron content — Flame
100 0001	atomic absorption spectrometric method
	Chromium ores
ISO 5975	Chromium ores — Determination of calcium and magnesium contents
ISO 5997	Chromium ores and concentrates — Determination of silicon content
ISO 6127	Chromium ores — Determination of phosphorus content
ISO 6129	Chromium ores — Determination of hygroscopic moisture content in
100 0400	analytical samples
ISO 6130	Chromium ores — Determination of total iron content

ISO 6127	Chromium ores — Determination of phosphorus content
ISO 6129	Chromium ores — Determination of hygroscopic moisture content in
	analytical samples
ISO 6130	Chromium ores — Determination of total iron content
ISO 6153	Chromium ores — Increment sampling
ISO 6154	Chromium ores — Preparation of samples
ISO 6331	Chromium ores and concentrates — Determination of chromium content
ISO 6629	Chromium ores and concentrates — Methods of chemical analysis

ISO 8889 Chromium ores and concentrates — Determination of aluminium content

Aluminium ores

ISO 6139	Aluminium ores — Experimental determination of the heterogeneity of distribution of a lot
	Other metalliferous minerals
ISO 3483	Copper and zinc sulfide concentrates — Determination of thallium
ISO 9599	Copper, lead, zinc and nickel sulfide concentrates — Determination of
aras	hygroscopic moisture content of the analysis sample
ISO 10251	Copper, lead, zinc and nickel concentrates — Determination of mass loss of bulk material on drying
ISO 10258	Copper sulfide concentrates — Determination of copper content
ISO 10378	Copper, lead and zinc sulfide concentrates — Determination of gold and silver
ISO 10469	Copper sulfide concentrates — Determination of copper
ISO 11441	Lead sulfide concentrates — Determination of lead content
ISO 11790	Copper, lead, zinc and nickel concentrates — Guidelines for the
	inspection of mechanical sampling systems
ISO 11794	Copper, lead, zinc and nickel concentrates — Sampling of slurries
ISO 12739	Zinc sulfide concentrates — Determination of zinc
ISO 12740	Lead sulfide concentrates — Determination of silver and gold contents
ISO 12742	Copper, lead and zinc sulfide concentrates — Determination of

ISO 12743 Copper, lead, zinc and nickel concentrates — Sampling procedures for

ISO 12744 Copper, lead, zinc and nickel concentrates — Experimental methods for

ISO 12745 Copper, lead and zinc ores and concentrates — Precision and bias of

ISO 13292 Copper, lead, zinc and nickel concentrates — Experimental methods for

determination of metal and moisture content

transportable moisture limits

checking the precision of sampling

ISO 13291 Zinc sulfide concentrates — Determination of zinc

mass measurement techniques

checking the bias of sampling

Other metalliferous minerals

mass of contained metal in a lot
Lead sulfide contentrates — Determination of lead content
Copper concentrates — Determination of mercury content
Copper, lead, zinc and nickel sulfide concentrates — Determination of
arsenic
Zinc sulfide concentrates — Determination of zinc content
Zinc sulfide concentrates — Determination of silver content — Acid
dissolution and flame atomic absorption spectrometric method
Copper and nickel sulfide ores and concentrates — Determination of
total chlorine content

Copper, lead, zinc and nickel sulfide concentrates — Determination of

Copper, lead and zinc sulfide concentrates — Step-by-step procedure for the testing of static scales Copper, lead and zinc sulfide concentrates — Determination of cadmium

Non-metalliferous minerals

Chemical analysis of magnesite and dolomite refractory products (alternative to the X-ray fluorescence method)

Equipment for drilling and mine excavation

Rock drilling equipment — Integral stems
Rock drilling equipment — Hollow drill steels in bar form, hexagonal and
round
Rock drilling equipment — Forged collared shanks and corresponding chuck
bushings for hollow hexagonal drill steels
Rock drilling — Rotary drill-rods and rotary drill-bits for dry drilling
Rock drilling equipment $-$ Drill rods with tapered connection for percussive
drilling
Rock drilling — Extension drill-steel equipment for percussive long-hole
drilling $-$ (27 and 32 mm)
Rock drilling — Extension drill-steel equipment for percussive long-hole
drilling — (38 to 64 mm)
Rotary core diamond drilling equipment — System A
Rotary core diamond drilling equipment — System B
Rubber hoses and hose assemblies for underground mining

Rotary core diamond drilling equipment — System C Wireline diamond core drilling equipment — System A Wireline diamond core drilling equipment — System CSSK Rock drilling equipment — Rope threaded drill steel equipment for percussive drilling Rock drilling equipment — Left-hand rope threads Mining and earth-moving machinery — Rock drill rigs and rock

reinforcement rias Continuous surface miners (CSM) — Safety requirements

Underground mining machines — Mobile extracting machines at the face

Haulage and hoisting equipment

High-tensile steel chains (round link) for chain conveyors and coal

Mining — Shackle type connector units for chain conveyors ISO 1082 ISO 3154 Stranded wire ropes for mine hoisting — Technical delivery requirements ISO 3155 Stranded wire ropes for mine hoisting — Fibre components ISO 3156 Stranded wire ropes for mine hoisting — Impregnating compounds, lubricants and service dressings

Mining — Scraper bars for chain conveyors ISO 5612 Mining — Drive sprocket assemblies for chain conveyors ISO 5613 ISO 5614 Locked coil wire ropes for mine hoisting Mining — Guidance on methods of verifying dimensions of sprocket ISO/TR 8865

assemblies for chain conveyors Conveyor belts — Specification for conveyor belts of textile construction ISO 22721 for underground mining

Solution Other mining equipment

Mining — Mobile machines working underground

Equipment for processing of minerals

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ISO 561	Coal preparation plant — Graphical symbols
ISO 923	Coal — Density separation equipment for coal
ISO 924	Coal preparation plant — Principles and conventions for flowsheets
ISO 2194	Industrial screens — Woven wire cloth, perforated plate and electroformed
	sheet
ISO 4077	Coal — Guidance for sampling in coal preparation plants
ISO 4782	Metal wire for industrial wire screens and woven wire cloth
ISO 4783	Industrial wire screens and woven wire cloth — choice of aperture size and
	wire diameter combinations
ISO 5146	Coal and coke — Coal preparation plant — Density tracer testing
ISO 7805	Industrial plate screens — Thickness of 3 mm and above
ISO 7806	Industrial plate screens — Codification for designating perforations

Industrial woven wire cloth Industrial screens and screening

Industrial plate screens Coal sizing equipment Coal preparation plant

Industrial wire screens