

Ministerial Regulation on Engineering Profession and Regulated Engineering Profession and Its Addendum B.E. 2550, Ministry of Interior

Regulated Engineering Disciplines

Engineering profession practitioners of the regulated engineering disciplines are bounded to comply to scopes of regulated engineering works, regulations and rules as they are stipulated by Engineer Act B.E. 2542 (1999). The regulated engineering disciplines are,

1. Civil engineering
2. Mining engineering
3. Mechanical engineering
4. Electrical engineering
5. Industrial engineering
6. Environmental engineering
7. Chemical engineering

The Regulated Engineering Works

The regulated Engineering works are categorized as follows

1. **Consultancy Work**, refers to professional suggestion, professional judgement, or certification of engineering work.
2. **Project Planning Work**, refers to the project study, analysis for optimal alternatives, or project planning.
3. **Design and Computational Work**, refers to professional details study for construction, building/construction work, production, plant and machinery layout with detailed computation programs, drawings, plans, specifications, or estimations.
4. **Construction or Production Supervision**, refers to directing, controlling; or control of construction, building, production, installation, maintenance, modification, dismantlement, or mobilization of work according to drawing, plan, and code of engineering professional practices.
5. **Investigation Work**, refers to research, analysis, testing, requisition of data and statistics for use as concepts in investigation or verification of work.
6. **Operation and Maintenance Supervision**, refers to directing of operation, maintenance of engineering work pieces or system according to drawing, plan, and code of engineering professional practices.

Scope of Regulated Engineering Work - Civil Engineering

1. Building higher than 3 stories , or structural building having height greater than 4 meters , or building having beam span greater than 5 meters ,
2. Public buildings at any size,
3. Warehouse, silo, cold storage or barn having capacity greater than 100 cubic meter,
4. Column structure, tower, or religious structure such as image of Buddha or pagoda having height greater than 6 meters ,
5. Bridge structure having bridge span greater than 10 meters ,
6. Jetty or dockyard having displacement tonnage greater than 50 metric tons ,
7. Precast concrete or precast prestressed concrete having length greater than 5 meters,
8. Concrete pile having length greater than 6 meters or having design load greater than 3 metric tons ,
9. Strengthened foundation works at any size,
10. Scaffolding or temporary supporting having height greater than 4 meters,
11. Concrete formwork of column having height greater than 4 meters or concrete formwork of beam having span greater than 5 meters ,
12. Substructure, temporary structure, retaining wall, dike or irrigation canal having height or depth greater than 1.5 meters ,
13. Structure of public transportation system, public road and highway, or taxiway or runway at any size,
14. Railway, public tram, highway, public road or taxiway or runway at any size,
15. Dam, dike, tunnel, culvert, or irrigation system having height greater than 1.5 meters, or having capacity greater than 50 cubic meters or having flow rate greater than 1 cubic meter per second,
16. Structure of Fluid container ; such as water tank, oil tank , irrigation tunnel, or swimming pool, having capacity greater than 50 cubic meter,
17. Irrigation pipe, portable water pipe, drainage pipe, or culvert having diameter greater than 0.8 meters, or having cross sectional area greater than 0.5 square meters with supporting structure, or having length greater than 100 meters ,
18. Irrigation system having gross area greater than 500 Rai (200 Acres) per project ,
19. Billboard or billboard structure having boarding area greater than 50 square meters and having height from ground level greater than 15 meters , or billboard or billboard structure having billboard area greater than 25 square meters installed on roof, roof top, or awning, or any attachments to the building,
20. Stadium having area greater than 1,000 square meters ,
21. Antenna tower structure for installation of transmitting radio signal or television broadcasting device having height greater than 25 meters from structural foundation or having weight greater than 200 kilograms .

Scope of Regulated Engineering Work – Mining Engineering

Mining engineering consists of 2 sub-discipline; mining engineering, metallurgical engineering.

Mining Engineering

1. Mining work having total power greater than 600 kilowatt ,
2. Underground mining at all sizes,
3. Mine tunneling or shaft or any openings in rock formation at all sizes,
4. Engineering work utilizing explosive,
5. Milling, grinding, or crushing of rock and mineral having total power greater than 600 kilowatt ,
6. Separation of waste materials utilizing mineral dressing process at all sizes,
7. Mineral dressing having total power greater than 100 kilowatt ,
8. Estimation and valuation of mineral reserve at all sizes.

Metallurgical Engineering

1. Separation of waste materials utilizing mineral dressing process at all sizes,
2. Mineral dressing having total power greater than 100 kilowatt ,
3. Iron smelting or production of steel having annual production capacity greater than 7,000 metric tons ,
4. Other mineral smelting or extraction of metal, alloys, or metallic compounds from ore mineral, slag, metal scrap, material or any others including metal purification having annual production capacity greater than 1,000 metric tons or having financial investment greater than 10 million baht, excluding land cost,
5. Melting, casting and molding, forming, properties treatment utilizing surface heat treatment or metal coating having labor employment greater than 35 person or having financial investment greater than 10 million baht , excluding land cost,

Scope of Regulated Engineering Work – Mechanical Engineering

1. All consultancy , investigation of mechanical engineering work on project planning ,design and computational work, construction or production supervision, operation or maintenance supervision at all types and sizes.
2. Project planning work
 - 1) Machinery having each of equipment value greater than 10 million baht, or having each of project value greater than 20 million baht, or having combined total power system greater than 100 kilowatts , or serving in a building having gross floor area greater than 2,000 square meters , or serving in a building having the occupancy greater than 200 persons.
 - 2) Other types of vapors boiler or Steam boiler, pressure vessel, or industrial kiln having each of equipment value greater than 10 million , or having each of project value greater than 20 million, or other type of vapors boiler or steam boiler , pressure vessel, or industrial kiln, utilizing annual thermal power greater than 20 mega-joules , or other type of vapors boiler or stream boiler, pressure vessel, or industrial kiln, serving in a building having gross floor area greater than 2,000 square meters , or serving in a building having the occupancy greater than 200 persons .
 - 3) Air conditioner or refrigerator having each of equipment value greater than 10 million baht , or having each of project value greater than 20 million baht , or having combined total power system greater than 100 kilowatt , or serving in a building having gross floor area greater than 2,000 square meters , or serving in a building having the occupancy greater than 200 persons.
 - 4) Fluid system in pressure pipeline, or in vacuum pipes having each of equipment value greater than 10 million baht , or having each of project value greater than 20 million baht, or having combined total power system greater than 100 kilowatt , or serving in a building having gross floor area greater than 2,000 square meters , or serving in a building having the occupancy greater than 200 persons.
 - 5) Energy management having capacity greater than 1,000 kilowatt or having annual energy greater than 20 mega-joules,
 - 6) Fire protection system having each of system value greater than 3 million baht , or having fire protection gross floor area greater than 2,000 square meters ,
3. Design and Computational Work
 - 1) Machinery having each of combined equipment power greater than 7.5 kilowatt ,
 - 2) Steam boiler or other type of vapors boiler, pressure vessel, or industrial kiln at all sizes,
 - 3) Air conditioner or refrigerator having each of equipment power greater than 7.5 kilowatt or having conditioned or refrigerated gross floor area greater than 400 square meters,
 - 4) Fluid system in pressure pipeline, or in vacuum pipes having fluid pressure greater than 500 kilopascal or vacuum pressure less than minus 50 kilopascal ,
 - 5) Energy management at all sizes,

- 6) Fire protection system having fire protection gross floor area greater than 2,000 square meters,
4. Construction or Production Supervision
 - 1) Machinery having each of combined total power system greater than 20 kilowatt,
 - 2) Steam boiler or other type of vapors boiler, pressure vessel, or industrial kiln having pressure greater than 500 kilopascal, or having volumetric capacity greater than 1 cubic meter , or having stream production capacity or other type of vapors production capacity greater than 500 kilogram per hour,
 - 3) Air conditioner or refrigerator having equipment power greater than 20 kilowatt,
 - 4) Fluid system in pressure pipeline, or in vacuum pipes having fluid pressure greater than 500 kilopascal or having vacuum pressure less than minus 50 kilopascal,
 - 5) Fire protection system having fire protection gross floor area greater than 5,000 square meters,
5. Operation and Maintenance Supervision
 - 1) Machinery having combined total power system greater than 500 kilowatt,
 - 2) Steam boiler or other type of vapors boiler, pressure vessel, or industrial kiln having stream production capacity of or other type of vapors production capacity greater than 20,000 kilogram per hour ,
 - 3) Air compressor or gas compressor having pressure greater than 1,300 kilopascal and having volumetric capacity greater than 10 cubic meters,
 - 4) Air conditioner or refrigerator having each of power system greater than 500 kilowatt ,
 - 5) Fluid system in pressure pipeline, or in vacuum pipes having fluid pressure greater than 500 kilopascal,
 - 6) Fire protection system having fire protection gross floor area greater than 5,000 square meters,

Scope of Regulated Engineering Work – Electrical Engineering

Electrical engineering consists of 2 sub-discipline; Electrical Power, Electrical Telecommunication.

Electrical Power

1. All consultancy of electrical power engineering work on project planning, design and computational work, construction or production supervision, investigation work or operation and maintenance supervision at all types and all sizes.
2. Project planning work
 - 1) Electrical power generating system having total capacity greater than 1,000 kVA or having maximum line voltage greater than 3,300 volt ,
 - 2) Power transmission line, power distribution system and electrical power system having combined total capacity greater than 1,000 kVA or having maximum line voltage greater than 3,300 volt,
3. Design and Computational Work
 - 1) Electrical system or electrical equipment having total capacity greater than 300 kVA or having maximum line voltage greater than 3,300 volt ,
 - 2) Public Building Electrical system having total electrical power greater than 200 kVA ,
 - 3) Fire alarm and signaling system and lightning protection system of high rise building, large scale building, or condominium,
4. Construction or Production Supervision
 - 1) Electrical system or electrical device having capacity greater than 1,000 kVA or having maximum line voltage greater than 12 kV,
 - 2) Public Building Electrical system having combined electrical power 200 kVA ,
 - 3) Fire alarm and signaling system and lightning protection of high rise building, large scale building, or condominium,
5. Investigation Work
 - 1) Electrical system or electrical equipment having capacity greater than 1,000 kVA or with maximum line voltage greater than 12 kV ,
 - 2) Fire alarm and signaling system and lightning protection system of high rise building, large scale building, or condominium,
6. Operation and Maintenance Supervision
 - 1) Electrical system or electrical equipment with capacity starting from 1,000 kVA and higher or with maximum line voltage starting from 12 kV and higher,

Electrical Telecommunication

1. All consultancy of electrical telecommunication engineering work on project planning, design and computational work, operation and maintenance supervision,
2. Project planning work of telecommunication network having receiving, transmission, and broadcasting stations to propagate electromagnetic wave of frequency greater than 300 kHz and having transmission power at each station greater than 1kW ,
3. Design and Computational Work

- 1) Electromagnetic wave propagation system having frequency greater than 300 kHz and having transmission power at each station greater than 1kW ,
- 2) Receiving, transmission, separating and multiplexing of signal system utilizing electromagnetic wave having frequency greater than 300 MHz and having greater than 60 audio channels or equivalent,
4. Operation and Maintenance Supervision of electromagnetic wave propagation system of frequency having 300 kHz and having transmission power at each station greater than 1kW ,

Scope of Regulated Engineering Work – Industrial Engineering

1. Consultancy work, project planning work, design and computational work, operation or production supervision, and investigation work,
 - 1) Manufacturing or service industries having labor employment greater than 50 persons or having plant financial investment greater than 20 million baht excluding land cost,
 - 2) Production, making or assembling, manufacturing of finish products or semi-finished products, melting, casting, molding, milling, or metal coating and heat treating, annealing, or forming of metal, wood, or other materials utilizing labor employment greater than 50 persons or having plant financial investment greater than 20 million baht excluding land cost.
 - 3) Metal smelting and purification of metal having following production capacity; tin metal greater than 2 tons daily production; lead, zinc, copper or antimony greater than 5 tons daily production; or in case of iron or steel greater than 30 tons daily production,
 - 4) Fire protection system having system value starting greater than 3 million baht or having building fire protection gross floor area of 2,000 square meters
2. Operation and maintenance supervision
 - 1) Operation Infrastructure and equipment for pollution control, waste water treatment , toxicity, dangerous substance, or treatment plant having labor employment greater than 50 persons, or having plant financial investment greater than 20 million baht excluding land cost.
 - 2) Ventilation system, lighting system, and other system relating to pollution control, waste water treatment, toxicity, dangerous substance, or any treatment plant having labor employment greater than 50 persons, or having plant financial investment greater than 20 million baht excluding land cost.
 - 3) Manufacturing and operation process utilizing chemical reaction, Biological effects flammable substance, dangerous substance, fractional distillation, or plant operation in vessel of pressure higher than atmospheric pressure having labor employment greater than 50 persons, or having plant financial investment greater than 20 million baht excluding land cost.
 - 4) Fire protection system having system value greater than 3 million baht or having building fire protection gross floor area greater than 2,000 square meters.

Scope of Regulated Engineering Work – Environmental Engineering

1. Waterworks and portable water system having maximum daily production capacity greater than 1,000 cubic ,
2. Portable water system for factory, public building, or large-scale building, having maximum daily production capacity greater than 50 cubic meters,
3. Wastewater treatment plant for community, factory, public building, or large-scale building having maximum daily capacity greater than 30 cubic meters ,
4. Recycling plant of wastewater for community, factory, public building, or large-scale building having maximum daily capacity greater than 30 cubic meters ,
5. Areal development or water resource development having environmental impacts relating to;
 - 1) Rain water or retaining of rain water having maximum capacity greater than 10,000 cubic meter per day,
 - 2) Drain water or artesian water having maximum capacity greater than 1,000 cubic meters per day,
6. Air pollution control system from pollutant sources having hourly ventilation capacity greater than 10,000 cubic meters,
7. Noise pollution control system for industrial plant or public building having noise level exceeding allowable threshold limit,
8. Soil remediation system having coverage area greater than 3,000 square meters , or water remediation system having maximum daily production capacity greater than 30 cubic meters,
9. Solid waste system as follows;
 - 1) Community solid waste having daily capacity greater than 10,000 kilograms ,
 - 2) Factory, industrial plant, public building, or large-scale building having daily solid waste capacity greater than 2,000 kilograms ,
 - 3) Infectious waste having daily capacity greater than 15 kilograms,
 - 4) Radiation waste at any size or capacity,
10. Industrial waste at any size or capacity,
11. Fire protection system having system value greater than 3 million baht, or having building fire protection coverage gross floor area 2,000 square meters .

Scope of Regulated Engineering Work – Chemical Engineering

1. Plant Manufacturing process , or plant utilizing chemical reaction, physical chemistry, biochemistry, or electro-chemistry to generate specified product having plant financial investment greater than 100 million baht excluding land cost, or having power system greater than 500 kilowatt or equivalent,
2. Plant Manufacturing process , or plant utilizing physical properties alteration or phase change on raw material to generate specified product having plant financial investment greater than 100 million baht excluding land cost, or having power system greater than 500 kilowatt or equivalent, in particular to manufacturing process utilizing chemical reaction, physical chemistry, biochemistry, or electro-chemistry,
3. Plant Manufacturing process, or plant utilizing raw material or to generate specified product in form of fine powder or pellet which may cause explosion or electrostatics having plant financial investment greater than 100 million baht excluding land cost, or having power system greater than 500 kilowatt or equivalent,
4. Plant Manufacturing process or plant utilizing dangerous chemical substance in mixture or admixture of the production,
5. Plant Manufacturing process or plant utilizing chemical reaction having pressure greater than 3 atmospheric pressure or having pressure less than 1 atmospheric pressure,
6. Waste management process or waste treatment process of manufacturing process or plant utilizing chemical substance, chemical catalysis, biochemical catalysis, biological catalysis, or production unit in waste treatment having plant financial investment greater than 1 million baht excluding land cost or having waste treatment process power system greater than 20 kilowatts or equivalent,
7. Storage or handling system within factory for shipment out of the factory having dangerous, chemical, or toxic substance, fine powder or grains which may cause an explosion or electrostatics having capacity greater than 20 metric tons,
8. Manufacturing process at all sizes utilizing or generating potential of dangerous, chemical, toxic, or flammable substance,
9. Manufacturing process utilizing chemical reaction, physical chemistry, biochemistry, or electrochemistry of the following production unit,
 - 1) Distillation tower, adsorption tower, filtration tower, extraction device, precipitation tank, or recrystallization device having operating power greater than 7.5 kilowatts or equivalent,
 - 2) Other particle separation equipment such as membrane separation, ionic exchange tower, filter press having operating power system greater than 7.5 kilowatts or equivalent,
 - 3) Other size separation equipment such as filter bag, cyclone, or electrostatics dust collector having operating power system greater than 7.5 kilowatts or equivalent,
 - 4) Evaporator or production industrial kiln having operating power system greater than 10 kilowatts or equivalent,
 - 5) Reactor at all sizes,
10. Fire protection System of chemical industrial plant at all sizes,