

Definition of Construction in the Input-Output Industry Classification (IOIC)

The construction industries in the supply-use framework are defined by the economic activities associated with the construction and repairs of specific structures. The economic activities include those performed by project managers, architect and engineers, general contractors, specialty trades and any other agent directly involved in the construction or repair of a specific structure. The specific structures are organized in accordance with Statistics Canada's [Annual Survey on Capital and Repairs Expenditures](#). The concepts are aligned with those described in Statistics Canada's catalogue [61-205-X – Private and Public Investment in Canada](#).

Expenditures on construction represent a process of human endeavor resulting in the erection, assembly, and completion of free standing, static buildings or other types of structures, generally on a permanent foundation, bedding or location. Construction expenditures exclude the purchase price of land but include outlays for land servicing and site preparation. Construction also includes modifications, additions and major renovations, conversions and alterations where either a structural change takes place or the life of an existing asset is extended beyond its normal life expectancy. Such structures may be above or below the surface of the earth for the passage or storage of materials and/or people. A structure, not classified as machinery, in terms of a building or "other structure" may be defined as an output of construction activity. Such outputs are produced to shelter, support, retain or convey something to someone. All construction activity can be either building construction, engineering construction, or repair construction.

Building construction represents any permanent structure with walls and a roof affording protection and shelter from and for a social and/or physical environment for people and/or materials. Such structures may also include portable or temporary shelters intended to remain in a particular location for a significant length of time, any subordinate or ancillary attachments to the structures needed to contain, to provide support, access or protection, and the component machinery and equipment which form a part of the structure with functions such as plumbing, electrical wiring, air conditioning, or elevators. For example, building construction represents expenditures on aircraft hangars, factories, hospitals, hotels, office buildings, railway stations, schools and shopping centres.

A listing of the structures included in building construction is provided under the definitions for IOIC industries *BS23A – Residential building construction* and *BS23B – Non-residential building construction*.

Engineering construction encompasses the direct or indirect conveyance of people, machinery, materials, gases, and/or electrical impulses. It also includes free standing structures which contain or restrain such objects either as part of such conveyance or separately and independently. Free standing structures erected for the transmission of electrical impulses may also include structures designed to provide light as static illumination of an area or as periodic signaling from a static location. In addition, the cost associated with significantly altering any terrain in the preparation for specialized use of that terrain will fall under engineering construction.

A listing of the structures included in engineering construction is provided under the definition for IOIC industries *BS23C – Engineering construction*.

Repair construction include expenditures which do not extend the expected useful life of the structure, increase its capacity or otherwise raise its capacity. Maintenance expenditures on buildings and other structures may include the routine care of assets such as janitorial services, snow removal and/or salting and sanding by the firm's own employees or persons outside the firm's employ.

The economic activities associated with the repair and maintenance to building and engineering structures is found in supply-use industry *BS23D – Repair construction*.

BS23A – Residential construction (also applies to IOIC industries BS23A0 and BS23A00)

This industry covers all economic activities, such as those performed by project managers, architect and engineers, general contractors, specialty trades and any other agent directly involved in the construction of residential structures.

Residential building construction represents any permanent structure with walls and a roof affording protection and shelter from and for a physical environment for people. Such structures may also include portable or temporary shelters intended to remain in a particular location for a significant length of time, any subordinate or ancillary attachments to the structures needed to contain, to provide support, access or protection, and the component machinery and equipment which form a part of the structure with functions such as plumbing, electrical wiring, air conditioning, or elevators.

The following is the list of structures deemed to be produced by the residential construction industry:

- Single detached houses
- Semi-detached houses
- Apartment and row houses
- Other residential houses

This industry also includes expenditures for modifications, additions and major renovations, conversions and alterations to residential buildings. The following are examples of activities included in this industry:

- Additions, renovations and other alterations such as the installation of in-ground and above ground pools, prefabricated sheds, decks, fences, landscaping and complete re-roofing.
- Replacement of equipment or fixtures to replace existing units such as replacing an electric water heater or oil furnace with a gas model.
- New installation of equipment or fixtures that did not previously exist on the property, such as the installation of a shower stall in a former half-bathroom.

The purchase of land for residential building construction is excluded from this industry.

BS23B – Non-residential construction (also applies to IOIC industries BS23B0 and BS23B00)

This industry covers all economic activities, such as those performed by project managers, architect and engineers, general contractors, specialty trades and any other agent directly involved in the construction of non-residential structures.

Non-residential building construction represents any permanent structure with walls and a roof affording protection and shelter from and for a social and/or physical environment for people and/or materials. Such structures may also include portable or temporary shelters intended to remain in a particular location for a significant length of time, any subordinate or ancillary attachments to the structures needed to contain, to provide support, access or protection, and the component machinery and equipment which form a part of the structure with functions such as plumbing, electrical wiring, air conditioning, or elevators.

Non-residential building structures can be organized into three broad groupings; industrial, commercial and institutional. The following is a list of examples included in each grouping:

Industrial Building Construction

- Plants for manufacturing, processing and assembling goods
- Railway shops, engine houses
- Maintenance garages, equipment storage, workshops
- Aircraft hangars
- Farm buildings

Commercial Building Construction

- Laboratories, research and development centres
- Warehouses, refrigerated storage, freight terminals
- Grain elevators and terminals
- Service stations including self-serve and car washes
- Automotive dealerships
- Office buildings
- Hotels, motels, convention centres
- Restaurants, fast food outlets, bars, nightclubs
- Shopping centres, plazas, malls, stores
- Theatres, performing arts and cultural centres
- Indoor recreational facilities such as sport complexes, clubhouses and stadiums
- Bunkhouses, dormitories, camp cookeries, camp
- Student residences
- Post offices
- Passenger terminals for air, ships, buses and other modes of transportation
- Broadcasting and communication buildings

Institutional Building Construction

- Schools, colleges, universities and other educational buildings and facilities
- Churches and other religious buildings
- Hospitals, health centres, clinics and other health care facilities
- Nursing homes and homes for the aged
- Day care centres
- Libraries
- Historical sites
- Penitentiaries, detention centres and court houses

- Museums, science centres, public archives
- Fire stations, halls
- Armouries, barracks, drill halls and other military structures

This industry also includes expenditures for modifications, additions and major renovations, conversions and alterations to non-residential buildings. The following are examples of activities included in this industry:

- Additions, renovations and other alterations such as the installation of accessible ramps and washrooms
- Replacement of equipment or fixtures to existing units such as heating or cooling systems.
- New installation of equipment or fixtures that did not previously exist on the property, such as the covering of an outside patio.

The purchase of land for residential building construction is excluded from this industry.

BS23C – Engineering construction

This industry covers all economic activities, such as those performed by project managers, architect and engineers, general contractors, specialty trades and any other agent directly involved in the construction of engineering structures.

Engineering construction encompasses the direct or indirect conveyance of people, machinery, materials, gases, and/or electrical impulses. It also includes free standing structures which contain or restrain such objects either as part of such conveyance or separately and independently. Free standing structures erected for the transmission of electrical impulses may also include structures designed to provide light as static illumination of an area or as periodic signaling from a static location. In addition, the cost associated with significantly altering any terrain in the preparation for specialized use of that terrain will fall under engineering construction.

Engineering structures can be organized into the following broad groupings:

- Marine engineering
- Transportation engineering
- Waterworks engineering
- Sewage engineering
- Electric Power engineering
- Communication engineering
- Oil and Gas engineering
- Mining engineering

This industry also includes expenditures for modifications, additions and major renovations, conversions and alterations to engineering structures.

The purchase of land for residential building construction is excluded from this industry.

BS23C10 – Transportation engineering construction (also applies to IOIC industry BS23C100)

This industry covers all economic activities, such as those performed by project managers, architect and engineers, general contractors, specialty trades and any other agent directly involved in the construction of transportation engineering structures.

Engineering construction encompasses the direct or indirect conveyance of people, machinery, materials, gases, and/or electrical impulses. It also includes free standing structures which contain or restrain such objects either as part of such conveyance or separately and independently. Free standing structures erected for the transmission of electrical impulses may also include structures designed to provide light as static illumination of an area or as periodic signaling from a static location. In addition, the cost associated with significantly altering any terrain in the preparation for specialized use of that terrain will fall under engineering construction.

The following are examples of transportation engineering structures:

- Parking lots and garages
- Highway and road structures and networks
- Runways (include lighting)
- Railway lines
- Bridges
- Tunnels

This industry also includes expenditures for modifications, additions and major renovations, conversions and alterations to transportation engineering structures.

The purchase of land for residential building construction is excluded from this industry.

BS23C20 – Oil and gas engineering construction (also applies to IOIC industry BS23C200)

This industry covers all economic activities, such as those performed by project managers, architect and engineers, general contractors, specialty trades and any other agent directly involved in the construction of oil and gas engineering structures.

Engineering construction encompasses the direct or indirect conveyance of people, machinery, materials, gases, and/or electrical impulses. It also includes free standing structures which contain or restrain such objects either as part of such conveyance or separately and independently. Free standing structures erected for the transmission of electrical impulses may also include structures designed to provide light as static illumination of an area or as periodic signaling from a static location. In addition, the cost associated with significantly altering any terrain in the preparation for specialized use of that terrain will fall under engineering construction.

The following are examples of oil and gas engineering structures:

- Oil refineries
- Natural gas processing plants
- Gas mains and services
- Pumping stations, oil
- Pumping stations, gas
- Bulk storage
- Pipelines
- Development drilling
- Production facilities in oil and gas extraction
- Enhanced recovery projects
- Site development and other pre-mining costs

This industry also includes expenditures for modifications, additions and major renovations, conversions and alterations to oil and gas engineering structures.

The purchase of land for residential building construction is excluded from this industry.

BS23C30 – Electric power engineering construction (also applies to IOIC industry BS23C300)

This industry covers all economic activities, such as those performed by project managers, architect and engineers, general contractors, specialty trades and any other agent directly involved in the construction of electric power engineering structures.

Engineering construction encompasses the direct or indirect conveyance of people, machinery, materials, gases, and/or electrical impulses. It also includes free standing structures which contain or restrain such objects either as part of such conveyance or separately and independently. Free standing structures erected for the transmission of electrical impulses may also include structures designed to provide light as static illumination of an area or as periodic signaling from a static location. In addition, the cost associated with significantly altering any terrain in the preparation for specialized use of that terrain will fall under engineering construction.

The following are examples of electric power engineering structures:

- Wind and solar power plants
- Steam production plants
- Nuclear production plants
- Hydraulic production plants
- Power transmission networks
- Power distribution networks

This industry also includes expenditures for modifications, additions and major renovations, conversions and alterations to electric power engineering structures.

The purchase of land for residential building construction is excluded from this industry.

BS23C40 – Communication engineering construction (also applies to IOIC industry BS23C400)

This industry covers all economic activities, such as those performed by project managers, architect and engineers, general contractors, specialty trades and any other agent directly involved in the construction of communication engineering structures.

Engineering construction encompasses the direct or indirect conveyance of people, machinery, materials, gases, and/or electrical impulses. It also includes free standing structures which contain or restrain such objects either as part of such conveyance or separately and independently. Free standing structures erected for the transmission of electrical impulses may also include structures designed to provide light as static illumination of an area or as periodic signaling from a static location. In addition, the cost associated with significantly altering any terrain in the preparation for specialized use of that terrain will fall under engineering construction.

The following are examples of communication engineering construction and structures:

- Cables and lines - coaxial, copper, aluminum, etc (exclude optical fibre) (e.g., aerial, underground and submarine)
- Optical fibre (e.g., aerial, underground and submarine)
- Transmission support structures - towers, poles, conduit

This industry also includes expenditures for modifications, additions and major renovations, conversions and alterations to communication engineering structures.

The purchase of land for residential building construction is excluded from this industry.

BS23C50 – Other engineering construction (also applies to IOIC industry BS23C500)

This industry covers all economic activities, such as those performed by project managers, architect and engineers, general contractors, specialty trades and any other agent directly involved in the construction of other engineering structures.

Engineering construction encompasses the direct or indirect conveyance of people, machinery, materials, gases, and/or electrical impulses. It also includes free standing structures which contain or restrain such objects either as part of such conveyance or separately and independently. Free standing structures erected for the transmission of electrical impulses may also include structures designed to provide light as static illumination of an area or as periodic signaling from a static location. In addition, the cost associated with significantly altering any terrain in the preparation for specialized use of that terrain will fall under engineering construction.

The following are examples of other engineering construction and structures:

- Seaports
- Canals and waterways
- Marinas and harbours
- Water filtration plants
- Water supply infrastructure
- Mine buildings including headframes, ore bins, ventilation structures, backfill plants and other surface buildings
- Mine buildings for beneficiation treatment of minerals (excluding smelters and refineries)
- Mine shafts, drifts, crosscuts, raises, declines, stopping, etc.
- Tailing disposal systems, settling ponds
- Mineral exploration
- Mine-site development
- Pollution abatement and control
- Outdoor recreational facilities
- Waste disposal facilities
- Irrigation networks
- Improved land
- Reclaimed land

This industry also includes expenditures for modifications, additions and major renovations, conversions and alterations to other engineering structures.

The purchase of land for residential building construction is excluded from this industry.

BS23D – Repair construction (also applies to IOIC industries BS23D0 and BS23D00)

This industry covers all economic activities, such as those performed by project managers, architect and engineers, general contractors, specialty trades and any other agent directly involved in the repair and maintenance of buildings and engineering structures.

Repair construction include expenditures which do not extend the expected useful life of the structure, increase its capacity or otherwise raise its capacity. Maintenance expenditures on buildings and other structures may include the routine care of assets such as janitorial services, snow removal and/or salting and sanding by the firm's own employees or persons outside the firm's employ.

BS23E – Other activities of the construction industry (also applies to IOIC industries BS23E0 and BS23E00)

This industry covers all economic activities, such as those performed by project managers, architect and engineers, general contractors, specialty trades and any other agent, associated the secondary production of various goods and services as a result of the direct production of building and engineering structures and the repairs and maintenance of such structures.

This secondary activity includes the production of the following products:

- Crush stone and gravel
- Earth and soil
- Boulders
- Non-residential rents
- Motor vehicle rents
- Machinery rents
- Management services
- Business support services