INTERCONTINENTAL STATISTICS COMMITTEE DEFINITIONS

EARTHMOVING PRODUCTS

Crawler Tractors (EM01)
A self-propelled, tracked machine used to exert a push and pull force through mounted equipment (dozer, drawbar, or ripper) to move objects or material.

Reporting Classifications: Based on Net Engine Horsepower (SAE J1349)

Wheel Loaders (EM04)
A wheeled vehicle which is equipped with a loader bucket on the front and is used primarily for loading materials, scooping and moving loose materials. May articulate or have other attachments.

Reporting Classifications:
Based on Net Engine Horsepower (SAE J1349)
Dual Dimension: Full Turn Tipping Load\(^1\) (ISO – 14397-1-2007, and 7546-1983)

\(^1\)The following shall serve as a guideline for determining and calculating the full turn tipping load:
The calculation of the full turn tipping load should be based on a manufacturer’s Standard Configuration (Options, bucket, tires, etc.) handling 16-32 mm crushed stone (aggregate).
Standard Configuration – tipping load for a particular model should be based upon the machine model’s most widely accepted lifting arm system, utilizing the machine model’s most widely accepted Bucket mounting configuration.
Most widely accepted lifting arm system – Refers to the primary and most frequently purchased lifting arm for a given machine model. Examples include Z-Bar or Parallel linkage or any other type of linkage purchased in considerable numbers.
**Bucket** – Most widely accepted bucket size and mounting configuration used for a specific machine model recognizing that pin-on type is the most widely accepted bucket attachment method. In the event that no pin-on bucket is available to be used for the calculation, then the tipping load for the model attachment coupler version with typical bucket should be calculated and reported. For wheel loaders < 40 ton operating weight, a general purpose bucket with Bolt-on edge is recommended the calculation. For wheel loaders > 40 ton operating weight, a spade nose rock bucket with teeth and segments is recommended for the calculation.

**Tires** – Highest percentage usage tires should be utilized for the calculation. Tires with ballast should not be used. The tipping load should be calculated without deflection of the tires. Tires are specified under a Declaration of Machine Configuration and the air pressure should follow the manufacturer’s recommendations.

**Fuel Tank & Other Options** – Calculation assumes a full fuel tank and no other optional equipment which could influence the tipping load, such as an optional counterweight, heavy guarding’s, etc.
**Motor Graders (EM07)**
Self-propelled machines having an adjustable blade positioned between the front and rear axles to cut, move, and spread material, usually to grade requirements.

Reporting Classifications: Based on Net Engine Horsepower (SAE J1349)

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**Rigid Frame Haulers (EM08)**
Off-highway vehicle for carrying loads where the engine compartment, cab, and cargo compartment are mounted on a continuous chassis. Vehicle designed for operations that would not be permitted on facilities with posted weight limits.

Reporting Classifications: Based on Rated Capacity in Metric Tons

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**Articulated Haulers (EM58)**
On- and off-highway vehicle for carrying loads. These vehicles have the load-carrying dump body and its associated frame, suspension, and drive wheels connected to the operator’s compartment, engine compartment, front suspension, and steering wheels through an articulated joint that gives a limited range of vertical and horizontal movement. Vehicle designed for operations mostly on hard-surfaced or graded roads with some work over unprepared surfaces.

Reporting Classifications: Based on Rated Capacity in Metric Tons
**Pipelayrs (EM71)**
A self-propelled machine with a purpose built boom for handling pipe.

Reporting Classification: Based on Net Engine Horsepower (SAE J1349)
Dual Dimension: Lift capacity in Metric Tonnes
**Crawler Excavators (EXHC)**

A crawler based mobile machine which has an upper structure capable of continuous rotation and which digs, elevates, swings, and dumps material by action of the boom, the arm, or telescoping boom and the bucket. Zero tail swing units are defined as machines in which the counterweight does not exceed the total width of the fixed track or of a fully expanded track during a 360 degree rotation. Minimal tail swing is a unit in which “tail Swing Radius” divided by the “Track Gauge” (at Extended Position) does not exceed 75%. This calculation eliminates the impact of the shoe width variance. Note: Track gauge-the distance between the center of the tracks (in the extended position).

**Reporting Classifications: Based on Working Weight in Metric Tons**
**Wheel Excavators (EXHW)**
A wheel based mobile machine which has an upper structure capable of continuous rotation and which digs, elevates, swings, and dumps material by action of the boom, the arm, or telescoping boom and the bucket.

Reporting Classifications: Based on Working Weight in Metric Tons
**Skid-Steer Loaders (IF11)**
A self-propelled machine with wheels and tires that is steered by using variation of speed and/or direction of rotation between wheels on opposite sides of the machine on fixed axels. It is primarily designed to do work by attachments or implements fastened to a lift arm or chassis. The operator of this unit is seated inside a ROPS (Rollover Protection Structure) (SAE J1388, 2.2.1)

**Reporting Classifications:** SAE Operating Load in U.S. pounds

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**Loader/Backhoes (IF18)**
A ride-on dual purpose self-propelled wheeled machine for on and off-road operation. One end with loader arms that can support a full width bucket or attachment and the other end incorporating a two piece boom and arm combination capable of swinging half circle for the purpose of digging or attachment manipulation.

**Reporting Classifications:** Based on two dimensions
a. Net Engine Horsepower (SAE J1349) and
b. Digging Depth, rated in U.S. feet, based on a 2 foot flat bottom trench

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**COMMERCIAL WORKSITE PRODUCTS**
Compact Track Loaders (IF12)
A self-propelled machine with a dedicated track system (not tracks over wheels and tires), which can be steel, rubber, or other composite compounds, that is steered by using variation of speed and or direction of rotation between tracks on opposite sides of the machine. It is primarily designed to do work with attachments or implements fastened to a lift arm or chassis. The operator of this unit is seated inside a ROPS (Rollover Protection Structure). Does not include those machines where the operator either walks behind or stands on the machine.

Reporting Classifications: Pounds 35% of Tipping Load per ISO J14397 Standard
**Rough-Terrain Forklifts, 2 Wheel Drive, Vertical Mast (IF21)**

A 2 wheel-drive machine with large pneumatic drive tires designed to pickup and carry loads over unimproved terrain with a vertical mast.

Reporting Classifications: Capacity at 24” Load Center in 1000’s of U.S. pounds
Telescopic Handlers (IF26)
A rough-terrain, variable-reach material handling machine, which utilizes a telescopic boom to place loads, perform light material handling with buckets, and may be coupled with a wide variety of work tools. It has a rigid frame with four-wheel steering. Used in agricultural and general construction applications.

Reporting Classifications Based on two dimensions:
   a. Capacity at 500 mm Load Center in metric tons and
   b. Lift Height by meters at maximum lift height.
**Crawler Loaders (EM02)**
A self-propelled, tracked machine with an integral front-mounted bucket supporting structure and linkage that loads material into the bucket through forward motion of the machine and lifts, transports, and discharges material.

Reporting Classifications: Based on Net Engine Horsepower (SAE J1349)

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**FORESTRY PRODUCTS**
(To better understand forestry terms, see definitions below)

*Forestry Terms*

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Felling</td>
<td>Separating a standing stem from the root system</td>
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<tr>
<td>Bunching</td>
<td>The gathering and arranging of trees or parts of trees in bunches or heaps</td>
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<tr>
<td>Delimming</td>
<td>Removing branches from trees or parts of trees</td>
</tr>
<tr>
<td>Harvesting</td>
<td>Cutting off and removing branches from trees or parts of trees</td>
</tr>
<tr>
<td>Loading</td>
<td>Picking up trees or parts of trees from the ground, or from a vehicle and piling them on another vehicle</td>
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<tr>
<td>Forwarding</td>
<td>Moving trees or parts of trees by carrying them</td>
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<tr>
<td>Skidding</td>
<td>Transporting trees or parts of trees by trailing or dragging</td>
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</tbody>
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**Crawler Mounted Log Loaders (EX01)**

A crawler mobile machine which has an upper structure capable of continuous rotation with a grapple and a purpose-built front linkage, and is designed to pick up and discharge trees or parts of trees for the purpose of piling or loading.

Reporting classifications: Based on operating weight in metric tonnes, fully equipped for forestry application, excluding attachments.

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**Purpose-Built Crawler Mounted Tree Harvesters or Processors (EX02)**

A purpose built, non-excavator based, crawler mobile machine which has an upper structure capable of continuous rotation and is able to delimb and crosscut to length and may be capable of felling standing trees.

Reporting classifications: Based on operating weight in metric tonnes fully equipped for forestry application, excluding attachments.

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**Crawler Mounted Swing-to-Tree Feller Bunchers (EX04)**

A purpose built, non-excavator based, crawler mobile machine which has an upper structure capable of continuous rotation designed to fell standing trees and arrange them in bunches. A swing-to-tree feller buncher is characterized by the movement of the booms and felling head during the bunching operation.

Reporting classifications: Based on operating weight in metric tonnes fully equipped for forestry application, excluding attachments.
**General Forestry Crawler Swing Machines (EX05)**
A crawler mobile machine which has an upper structure capable of continuous rotation and designed for deliming, forestry road building, processing, harvesting, silviculture, etc. A general forestry machine is usually excavator based and excludes machines reported in EX01, EX02 or EX04 or EXHC. Final configuration is often unknown at time of manufacture and shipment, typically being field converted.

Reporting classifications: Based on operating weight in metric tonnes of the base machine with standard undercarriage, boom and arm, excluding attachments.

No photos available.

**Purpose Built Wheeled Tree Harvesters or Processors (EX06)**
A purpose built, wheeled mobile machine equipped with a variable reach boom and attachment which is able to fell, de-limb and crosscut to length standing trees.

Reporting classifications: Based on engine power (ISO)

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**Wheel Log Skidders (IF10)**
Single-function harvesting machine used in the forest industry. A wheeled machine designed to slide or drag logs from the tree stump to a landing.

Reporting Classifications: Based on Net Engine Horsepower (SAE J1349)
Forwarders (IF51)
Single-function harvesting machine used in the forest industry. Self-propelled machine, usually self-loading, designed to transport trees and parts of trees by carrying them completely off the ground.

Reporting Classifications: Based on Load Capacity in Metric Tons

Knuckleboom Loaders (IF61)
A machine with grapple and supporting structure designed to pick up and discharge trees or parts of trees for the purpose of piling or loading.

Reporting Classifications: Based on Operating Weight in Metric Tons

Drive-to-Tree Feller Bunchers, 4 Wheel (IF62)
An articulated, four wheel, tractor with a hydraulic shear or saw designed to fell standing trees and arrange them in bunches. The machine can accumulate and carry the felled trees in the felling head.

Reporting Classifications: Based on Gross Engine Horsepower (SAE rated)

No photos available.
**Compaction Equipment**

**CEA1-Vibratory Roller Walk-Behind, 1D**
Walk behind vibratory roller with a single heavy-duty machined steel drum used for a wide variety of asphalt and soil compaction applications.

*Reporting Classification: by Metric Tons*

**CEA2-Vibratory Roller Walk-Behind, 2D**
Walk behind vibratory roller with dual heavy-duty machined steel drums used for a wide variety of asphalt and soil compaction applications.

*Reporting Classification: by Kilograms*
CEA3-Trench Rollers Double Drum
Walk behind or ride-on vibratory roller with dual heavy-duty machined steel drums for the compaction of base coarse, various sizes of aggregate and a variety of soil conditions. These rollers are used for operation in confined areas such as trenches where turning would otherwise be difficult if not impossible.

*Reporting Classification: by Metric Tons*
CEB0-Vibratory Tandem Roller, 2D
Ride-on steel wheel roller with two (double drum) drums mounted on tandem axles, which compacts pavement using the combined force of the roller’s weight and the vibration of the drums. Designed for compaction of bitumen mixtures and other types of layers in a variety of construction projects.

Reporting Classification: by Metric Tons and Drum Width
CEC0-Vibratory Tandem Roller, 1D
Ride-on steel wheel roller with one (single) drum mounted on tandem axles, which compacts pavement using the combined force of the roller’s weight and the vibration of the drum. Designed for compaction of bitumen mixtures and other types of layers in a variety of construction projects. Machine looks like any other tandem, vibratory, roller except that only one of the drums will vibrate.

*Reporting Classification: by Metric Tons*

No photos available.

CED1-Vibratory Tow – Smooth
Tow behind vibratory roller with a smooth drum. Designed for the compaction of unbound soil applications such as sand, gravel, and mixed soils.

*Reporting Classification: by Metric Tons*

No photos available.

CEE1-Vibratory Single Drum – Asphalt
Roller with one vibratory drum used to compact asphalt using the combined force of the drum’s weight and the vibration of the drum. Designed for compaction of bitumen mixtures and other types of layers in a variety of construction projects.

*Reporting Classification: by Metric Tons*

No photos available.
CEE2-Vibratory Single – Soil Smooth
Roller with one smooth, no tread, tires on the rear used to perform compaction on water bound materials, sand, gravel and sub-bases, and a variety of soil compaction jobs, such as granular soil jobs, cohesive soil jobs, streets and roads, parking areas and building sites, look almost identical to a single drum soil compactor, except for the smooth rear tires and the front mounted water tank. Versatile with good maneuverability in confined spaces.

*Reporting Classification: by Metric Tons and Drum Width*
CEE3-Vibratory Single Drum- Soil Padfoot
Roller with one padfoot drum used to perform a variety of soil compaction jobs; such as cohesive and high water content materials. Versatile with good maneuverability in confined areas.

Reporting Classification: by Metric Tons and Drum Width

CEF0-Combination Rollers
Roller with one vibratory drum used to compact a combination of surfaces including bituminous mixtures in large works, base, intermediate and running layers, but also in non bituminous mixtures like gravel, cement, dry concrete, stabilized soils. Versatile with good maneuverability in confined areas.

Reporting Classification: by Metric Tons
**CEG0-Pneumatic Tired Roller**
A roller with 3 to 5 rubber tires mounted on two tandem axles. The wheels that the tires are mounted to oscillate, which means they are capable of moving up and down independently of each other. The pneumatic roller compacts a pavement using the combined force of weight and the kneading action of the oscillating wheels.

*Reporting Classification: by Metric Tons*

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**CEH1-Tandem Roller (Static) (Metric Tons)** -
A steel wheel roller with two drums mounted on tandem axles, which compacts a pavement using the force of the roller’s weight.

*Reporting Classification: by Metric Tons*

No photos available.

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**CEH2-3 Wheel Roller (Static)**
A steel wheel roller with three drums, two drums mounted on the rear axle and a smaller drum mounted on the front tandem axle, which compacts a pavement using the force of the roller’s weight. The configuration of the drums on a three-wheel roller allows it to compact longitudinal joints without interfering with traffic in the adjacent lane.

*Reporting Classification: by Metric Tons*

No photos available.
**CEK1-Embarkment - Pad/Sheep**
Soil compactors primarily designed to densify or pack soil resulting in increased weight per unit volume. Designed to use one or a combination of static weight (or pressure), kneading action (or manipulation), impact (or sharp blow), or vibration (or shaking).

*Reporting Classification: by Metric Tons*

No photos available.

**CEK2-Refuse - Pad/Sheep**
Refuse/landfill rollers are specialized equipment primarily designed for spreading and compacting large volumes of waste in a landfill environment. These rollers are configured and guarded to work in a waste environment and are capable of achieving superior compaction levels.

*Reporting Classification: by Metric Tons*

**CEL1-Vibratory Plate – Forward**
A hand operated vibratory plate that is used in the forward moving compaction of granular loose soils and gravels in the creation of firm and stable surfaces. Plate compactors are also used to set the paving stones in the sand bed and to settle the joint sand. Vibratory plates operate in confined areas for the compaction of sand, gravel and crushed aggregate, as well as hot and cold asphalt.

*Reporting Classification: by Kilograms*
CEL2-Vibratory Plate – Reverse
A hand operated reversible vibratory plate that compacts sand, gravel, and cohesive soils such as clay and silt. The vibratory plate has reversing and stationary features that allow compaction in confined areas where turning is difficult – or even impossible – for a non-reversing unit. Highly maneuverable, they are ideal for tightly confined areas.

Reporting Classification: by Kilograms
CEM0-Vibratory Tampers
A hand operated vibratory tamper that typically has a low center of gravity and a variable column guide. Tampers have a horizontal force component for moving forward. They are typically used to compact bituminous material in a very confined space.

Reporting Classification: by Metric Tons
CPRM-Cold Planers
Self-propelled construction machine (either rubber-tired or crawler mounted) specifically designed to cut a pavement to a predetermined depth, grade or slope, and which reduces the pavement material in size in the process, using a rotating drum equipped with special cutting tools. This milling machine is designed to restore pavement surface to a specified grade and slope; remove bumps, ruts, and other imperfections; and leave a textured surface that can be opened immediately to traffic or overlaid with new pavement materials.

Reporting Classification: by Inches
**CEAP-Asphalt Pavers**
Self-propelled machine (either rubber-tired or crawler mounted) consisting of a tractor of a certain width designed to tow an asphalt screed of a certain width, used to distribute, shape, and partially compact a layer of asphalt on the surface of a roadway, parking lot or other area. The paver receives asphalt, conveys it through the tractor and distributes it in front of the screed.

*Reporting Classification: by Combination of Horsepower and Under Carriage*

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**RS01-Road Reclaimers/Soil Stabilizers (Horsepower)**
Road reclaimers are self-propelled machines that pulverize the asphalt layer and mix it with the underlying base to stabilize deteriorated roadways. Reclaimers can add asphalt emulsions or other binding agents during pulverization or during a separate mix pass. Soil stabilizers are self-propelled machines that cut, mix and pulverize native in-place soils with additives or aggregates to modify and stabilize the soil for a strong base. Different cutting depths are available to match job requirements.

*Reporting Classification: by Horsepower*

No photos available.