
**Building construction machinery and
equipment — Terms and definitions**

*Machines et matériels pour la construction des bâtiments — Termes et
définitions*

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Foreword

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International Standard ISO 11375 was prepared by Technical Committee ISO/TC 195, *Building construction machinery and equipment*.

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Scope

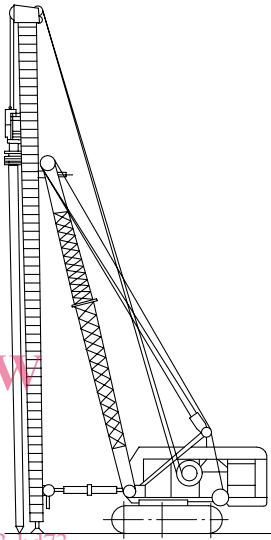
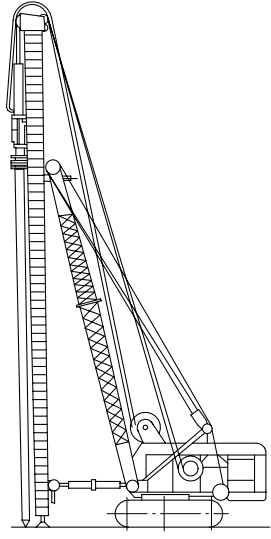
This International Standard specifies terminology for machines and equipment used in the building construction industry, for ease for reference and for use in discussions on standardization activities.

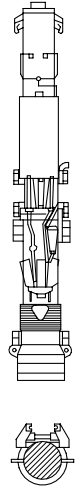
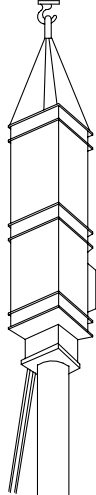
This International Standard refers to machines and equipment used on construction sites. They are divided into five groups:

- assembly of machines and components for installation and extraction of piles;
- equipment for preparing, conveying and compaction of concrete, mortar and processing reinforcement and formwork;
- machinery and equipment for aggregate processing;
- equipment for finishing work and maintenance;
- machinery and equipment for general use in construction processes.

The machinery and equipment presented in these particular groups are used primarily in building processes.

This International Standard does not include groups of building machines such as earth-moving machinery, cranes, lifting and access machinery.

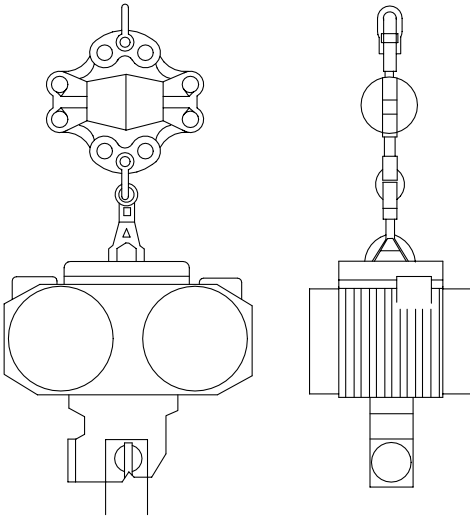
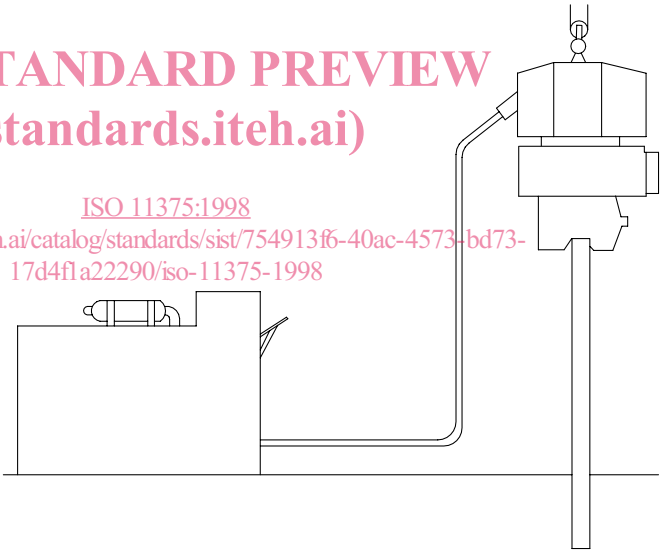
Item	Term	Definition	Illustration
1 Foundation equipment			
1.1	Piling equipment	Assembly of machines and components for the installation and extraction of piles.	See figures 1 to 8.
1.1.	Piling rig	Carrier machine complete with leader attachment and leader for support of pile installation equipment.	
1.1.2	Impact hammer	Hammer whose striking energy is produced by raising the striking mass; at the end of the subsequent downward motion this mass impacts directly or indirectly on the pile.	See figures 1 to 4.
1.1.2.1	Drop hammer	Hammer whose striking mass is raised by a wire rope roll on a winch or by similar means.	 <p data-bbox="464 987 1118 1099" style="text-align: center;">iTeh STANDARD PREVIEW (standards.iteh.ai)</p> <p data-bbox="429 1133 1158 1227" style="text-align: center;">ISO 11375:1998 https://standards.iteh.ai/catalog/standards/sist/754913f6-40ac-4573-bd73-17d4fla22290/iso-11375-1998</p> <p data-bbox="1169 1200 1265 1227" style="text-align: right;">Figure 1</p>
1.1.2.2	Steam / Air hammer	Hammer whose striking mass is raised by air or steam pressure.	 <p data-bbox="1169 1809 1265 1836" style="text-align: right;">Figure 2</p>

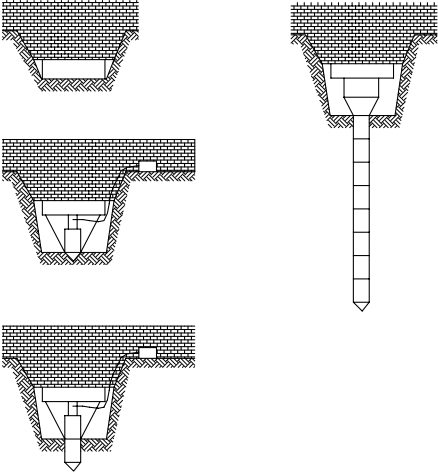
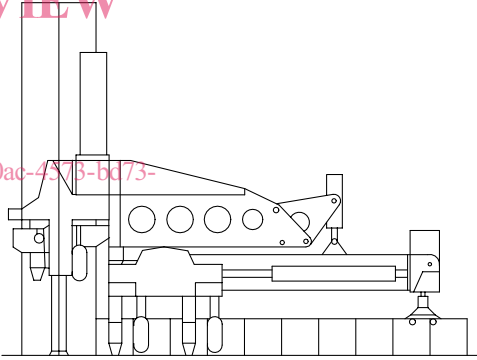
Item	Term	Definition	Illustration
1.1.2.3	Diesel hammer	<p>Hammer whose striking mass is raised by pressure of gases resulting from the combustion of a fuel mixture.</p> <p>NOTE — Normally this is diesel fuel, but other compression ignition engine fuels can also be used.</p>	 <p style="text-align: center;">Figure 3</p>
1.1.2.4	Hydraulic hammer	<p>Hammer whose striking mass is raised by hydraulic pressure.</p>	 <p style="text-align: center;">Figure 4</p>
		<p>NOTE — Vibration is produced in a vibrator gearbox while a suspension device, placed above the vibrator gearbox, dampens in order to protect the supporting crane. The element to be installed in or extracted from the ground is rigidly held under the vibrator gearbox by means of one or more clamps.</p>	<p>See figures 5 and 6.</p>

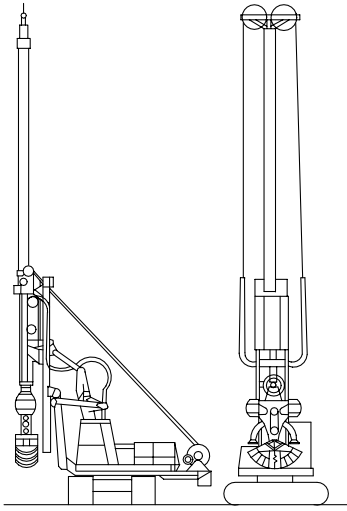
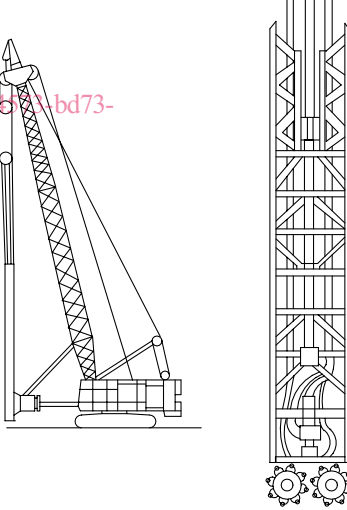
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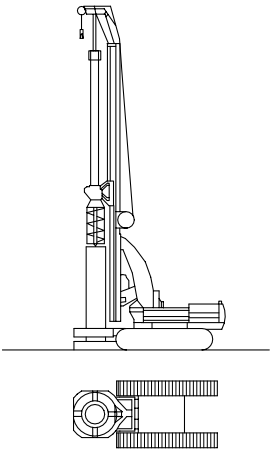
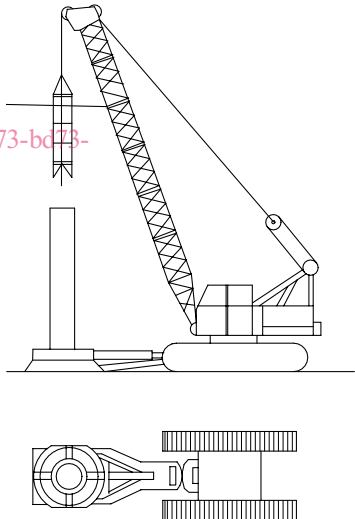
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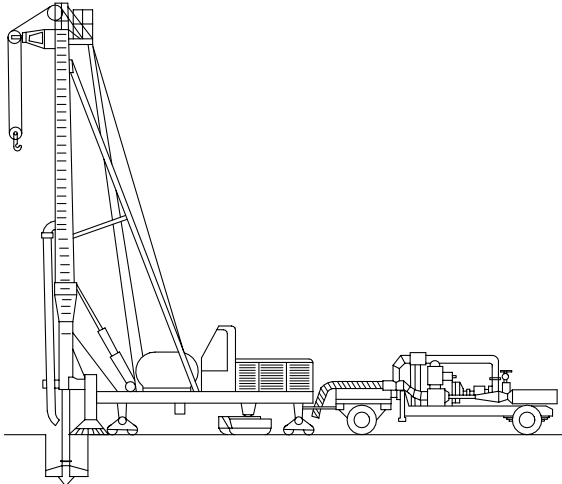
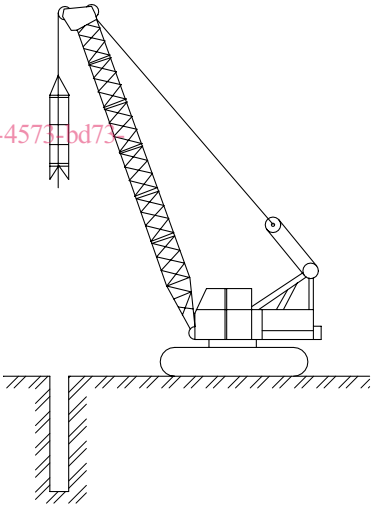
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Item	Term	Definition	Illustration
1.1.3.1	Vibrating pile driver (electric type)	Pile driver with electric motor(s) used to generate the vibrations.	 <p style="text-align: center;">Figure 5</p>
		<p style="text-align: center;">iTeh STANDARD PREVIEW (standards.iteh.ai)</p> <p style="text-align: center;">ISO 11375:1998 https://standards.iteh.ai/catalog/standards/sist/754913f6-40ac-4573-bd73-17d4f1a22290/iso-11375-1998</p>  <p style="text-align: center;">Figure 6</p>	
1.1.4	Pile forcing equipment	Equipment for driving jointed or unjointed piles, as well as steel diaphragms or sections into the ground.	See figures 7 and 8.

Item	Term	Definition	Illustration
1.1.4.1	Equipment for jacking preformed pile sections into the ground	<p>Equipment comprising a hydraulic power unit and a hydraulic cylinder, used for jacking pre-fabricated pile sections in an excavation under and against existing foundations.</p> <p>NOTE — Such equipment is used in underpinning old foundations in cases where there is insufficient room for other machines.</p>	 <p style="text-align: right;">Figure 7</p>
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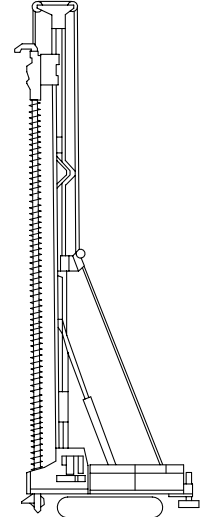
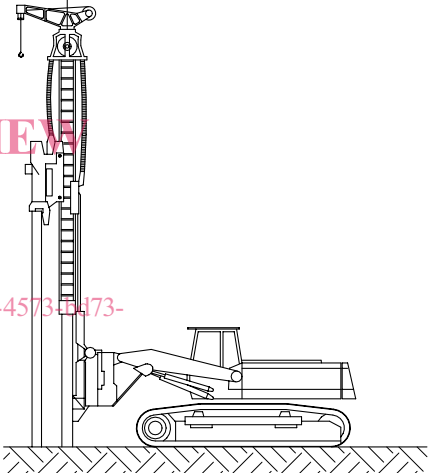
Item	Term	Definition	Illustration
1.2.1	Diaphragm walling equipment using hydraulic grabs and telescopic extension rods	<p>Truck- or crawler-mounted rig, comprising a hydraulically operated grab bucket and a telescopic extension rod.</p> <p>NOTE — Used for making deep, non-circular holes or trenches in the ground, in which concrete piles and sheet piles are formed. Also cut-off walls may be formed in such trenches.</p>	 <p style="text-align: center;">Figure 9</p>
		<p>NOTE — Used for making non-circular holes and trenches in the ground, in which concrete piles and sheet piles or cut-off walls are formed. A stabilizing fluid is used as protection during excavating.</p>	
1.2.3	Diaphragm walling equipment using milling cutters	<p>Truck- or crawler-mounted machine equipped with a milling unit to cut a trench in the ground, with a stabilizing fluid as protection during milling; milling dust is removed from the trench by a pumping system incorporated in the milling unit.</p> <p>NOTE — Concrete diaphragm walls or cut-off walls may be formed in such trenches.</p>	 <p style="text-align: center;">Figure 10</p>
1.3.1	Drilling pile forming rig	<p>Drilling rig used in forming cast-in-place piles in holes drilled with the use of withdrawable casing.</p>	<p>See figures 11 and 12.</p>

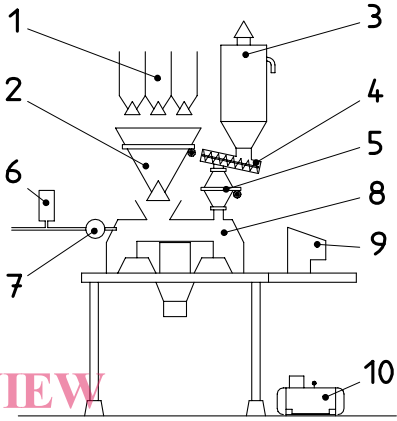
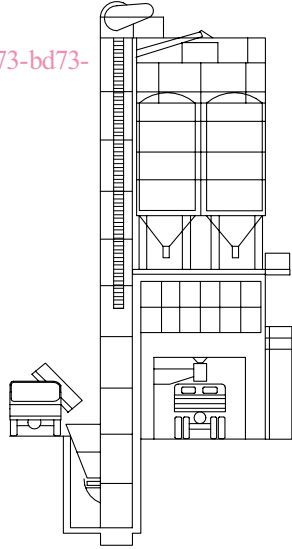
Item	Term	Definition	Illustration
1.3.1.1	Rig for rotary drilling and installation of withdrawable casing	<p>Truck- or crawler-mounted machine, equipped with a guiding tower, a rotary drilling unit and a device for installation and extraction of the casing.</p> <p>NOTE — The equipment is used for making piles by placing concrete in a borehole with simultaneous recovery of the tube employed as casing.</p>	 <p style="text-align: center;">Figure 11</p>
		<p>NOTE — The equipment serves to form piles by placing concrete in a borehole, with simultaneous recovery of the tube employed as the casing.</p> <p style="text-align: center;">iTeh STANDARD PREVIEW (standards.iteh.ai)</p> <p style="text-align: center;">ISO 11375:1998 https://standards.iteh.ai/catalog/standards/sist/754913f6-40ac-4573-bc73-17d4f1a22290/iso-11375-1998</p>	 <p style="text-align: center;">Figure 12</p>

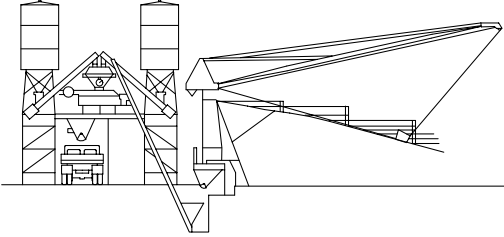
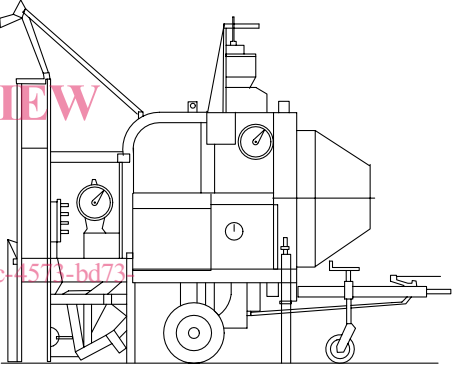
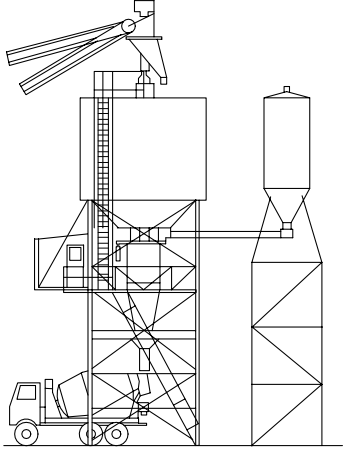
Item	Term	Definition	Illustration
1.3.2.1	Rig for rotary drilling with stabilizing fluid	<p>Truck- or crawler-mounted machine, furnished with a guiding mast, rotary drilling unit, hollow rod and a drilling mud pumping unit for continuous removal of drillings from boreholes.</p> <p>NOTE — The equipment is used for forming piles by placing concrete in holes protected by a stabilizing fluid during drilling.</p>	 <p style="text-align: right;">Figure 13</p>
		<p>NOTE — The equipment is used to form piles by placing concrete in holes protected by a stabilizing fluid during drilling.</p>	 <p style="text-align: right;">Figure 14</p>

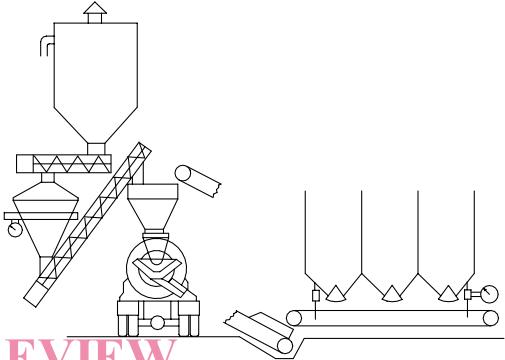
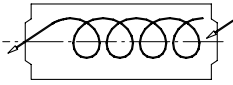
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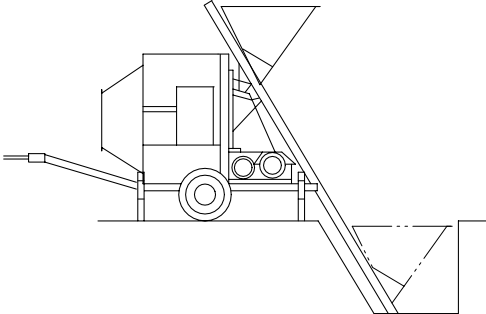
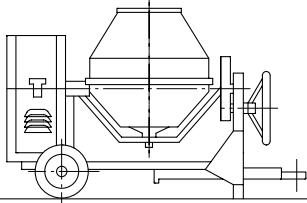
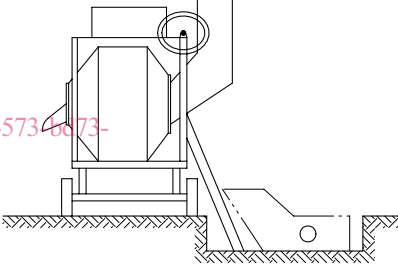
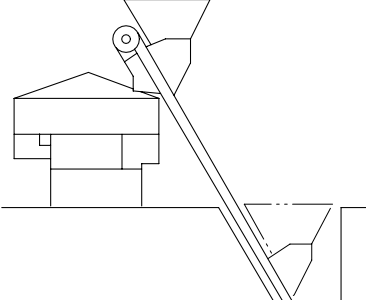
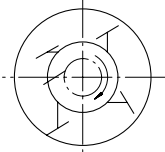
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Item	Term	Definition	Illustration
1.3.2.3	Rig for rotary drilling with a continuous-flight auger	<p>Truck- or crawler-mounted machine, with a guiding tower and drilling unit moving along the guides.</p> <p>NOTE — The equipment is used for drilling of holes by a single passage of long auger and for formation of piles by placing concrete in the holes. Concrete is fed through the drilling head and hollow auger, filling the hole while the auger is being withdrawn.</p>	 <p style="text-align: center;">Figure 15</p>
1.3.2.4	Multipurpose pile driving and extracting equipment	<p>Hydraulic carrier machine (usually hydraulic excavator) equipped with telescopic leader system designed to fix quickly the following attachment:</p> <ul style="list-style-type: none"> — vibratory pile drivers, — static pile pushing and pulling device, — rotary drilling with continuous flight auger, — impact hammer (hydraulic or diesel). <p style="text-align: center;">ISO 11375:1998 https://standards.iteh.ai/catalog/standards/sist/754913f6-40ac-4573-1473-17d4f1a22290/iso-11375-1998</p>	 <p style="text-align: center;">Figure 16</p>

Item	Term	Definition	Illustration
<p>2 Equipment for preparing, conveying and compaction of concrete, mortar and processing reinforcement</p>			
2.1	Machines and equipment for concrete mix production	Machines and equipment designed for storing, proportioning and mixing concrete.	See figures 17 to 27.
2.1.1	Concrete mixing plant	<p>Set of equipment for concrete mix production.</p> <p>NOTE — Aggregate storage bins are located at the side of the mixer.</p>	 <p>Key</p> <ul style="list-style-type: none"> 1 Aggregate storage bins 2 Aggregate weighing unit 3 Cement silo 4 Cement conveyor 5 Cement weighing unit 6 Admixture dosage unit 7 Water dosage unit 8 Mixer 9 Electric control system 10 Pneumatic system <p style="text-align: right;">Figure 17</p>
		<p style="text-align: center;">ISO 11375:1998</p> <p style="text-align: center;">https://standards.iteh.ai/catalog/standards/sist/754913f6-40ac-4573-bd73-17d4f1a22290/iso-11375-1998</p>	 <p style="text-align: center;">Figure 18</p>

Item	Term	Definition	Illustration
2.1.1.2	Horizontal concrete mixing plant	<p>Set of machines and equipment for the production of concrete mix, characterized by the location of aggregate storage bins or an active storage arrangement at the side of the mixer.</p> <p>NOTE — In some types of the horizontal concrete mixing plant, the aggregate feeding skip also serves as a weighing hopper. Instead of an aggregate storage yard with a retaining wall, there may be aggregate bins with a belt or a scraper conveyor feeding aggregate directly to the batcher.</p>	 <p style="text-align: center;">Figure 19</p>
2.1.1.4	Transferable concrete mixing plant	Concrete mixing plant capable of relocation by dismantling for transportation and reassembling.	See figures 18 and 19.
2.1.1.5	Mobile concrete mixing plant	<p>A trailer-mounted concrete mixing plant.</p> <p>NOTE — Only the horizontal types of plant appear in this group.</p>	 <p style="text-align: center;">Figure 20</p>
2.1.2.1	Vertical concrete mix batching plant	<p>Machines and equipment for proportioning the constituents and for loading mixed concrete into transport vehicles.</p> <p>NOTE — Aggregate storage bin is located above the batcher and the vehicle being loaded.</p>	 <p style="text-align: center;">Figure 21</p>

Item	Term	Definition	Illustration
2.1.2.2	Horizontal concrete mix batching plant	<p>Set of machines and equipment for proportioning constituents and for loading concrete mix into transport vehicles.</p> <p>NOTE 1 — The aggregate storage bin is located at the side of the charging (feeding) hopper.</p> <p>NOTE 2 — The horizontal batching plant may also be designed:</p> <ul style="list-style-type: none"> — in a layout similar to the horizontal concrete mixing plant, including storage yard with a retaining wall (see 1.1.2); — with direct aggregate feed to the batcher by a scraping conveyor, i.e. without aggregate storage bins. 	 <p style="text-align: center;">Figure 22</p>
2.1.2.4	Transferable concrete batching plant	<p>A plant for proportioning concrete mix constituents, capable of relocation by stripping for transportation and reassembling.</p>	See figures 21 and 22.
2.1.3	Concrete mixers	<p>Machines designed for the production of concrete by mixing of measured (by mass or volume) proportions of water, cement, aggregate and possibly chemical additives, within a certain time limit.</p> <p>NOTE — A concrete mixer may be furnished with the following accessories: charging skip hoist, fixed or wheeled supporting frame, mechanical shovel, water dosing equipment, and a skip weighing system.</p>	See figures 23 to 27.
2.1.3.1	Batch-type concrete mixer	Mixer in which charging with concrete constituents and discharging of the drum are carried out periodically, in batches.	See figures 24 to 27.
2.1.3.2	Continuous-type concrete mixer	Mixer in which charging with concrete constituents and discharging of the drum are carried out continuously as an uninterrupted flow.	 <p style="text-align: center;">Figure 23</p>
2.1.3.3	Gravity concrete mixer (Free-fall concrete mixer)	Machine where mixing is effected by repeatedly elevating the mixed concrete and dropping it from a certain height, inside a mixing drum, during its rotation.	See figures 24 and 25.

Item	Term	Definition	Illustration
2.1.3.3.1	Reversing (drum) concrete mixer	Gravity mixer with a reversible direction of rotation of the mixing drum; discharge of mixed concrete is by reversing the rotation of the drum.	 <p style="text-align: center;">Figure 24</p>
2.1.3.3.2	Tipping drum concrete mixer	Free-fall mixer with a tipping mixing drum, open at one end for charging and discharging of the concrete mix; discharging is carried out by tilting the drum.	 <p style="text-align: center;">Figure 25</p>
2.1.3.3.3	Discharging chute concrete mixer	Free-fall mixer, with a mixing drum open at both sides; charging is carried out from one side and discharging from the other by means of a chute entering the drum.	 <p style="text-align: center;">Figure 26</p>
		NOTE — The illustrations of individual compulsory mixer types shown in figures 28 to 34 depict the pattern movement of the agitators.	 <p style="text-align: center;">Figure 27</p>
2.1.3.4.1	Turbo concrete mixer	Compulsory concrete mixer with an agitator rotating about the vertical axis of a stationary pan, charged from the top and discharged by opening a segment of the pan bottom.	 <p style="text-align: center;">Figure 28</p>