
**Road construction and road maintenance
machinery and equipment — Basic
types — Identification and description**

*Machines et matériels pour la construction et l'entretien des routes —
Principaux types — Dénomination et description*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 22242 was prepared by Technical Committee ISO/TC 195, *Building construction machinery and equipment*.

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Introduction

A whole range and many different types of machinery are needed for building and maintaining traffic routes, roads, highways, runways, aprons, etc. These can be divided into the following main groups, falling within the particular scopes of ISO Technical Committees.

- Tractors and machinery for agriculture and forestry (ISO/TC 23)

EXAMPLE Brush-cutters and brush saws, log loaders, portable chain saws, branches-shredders, drainage pipe layers, digger ploughs and other machines defined in ISO 3339.

- Earth-moving machinery (ISO/TC 127)

EXAMPLE Excavators, tractor dozers, scrapers, loaders, dumpers, trenchers, graders, rollers, vibratory plates, rammers and other machines defined in ISO 6165, ISO 6747, ISO 7131, ISO 7132, ISO 7133, ISO 7134 and ISO 8811.

- Building construction machinery and equipment (ISO/TC 195)

EXAMPLE Formworks, drum mixers, machines and equipment for concrete-mix production, truck concrete mixers and concrete transport skips, concrete pumps, vibrating beams, floating machines, concrete vacuum treatment units, core drilling units and other machines defined in ISO 11375.

- General-use machinery and equipment

EXAMPLE Power tools such as hammers, industrial vacuum cleaners, blowers, water pumps, portable chain saws, liquid gas heating units, infrared heaters.

- Machines and equipment designed especially for road construction and maintenance (ISO/TC 195).

This International Standard identifies and describes elements of this last group.

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Road construction and road maintenance machinery and equipment — Basic types — Identification and description

1 Scope

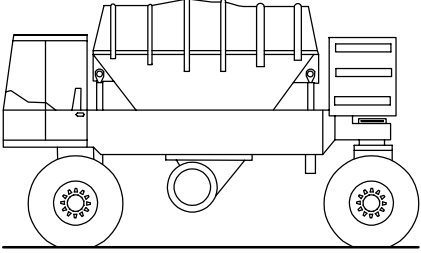
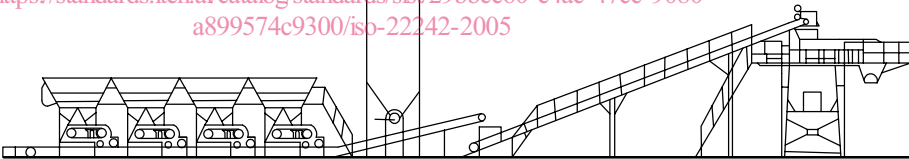
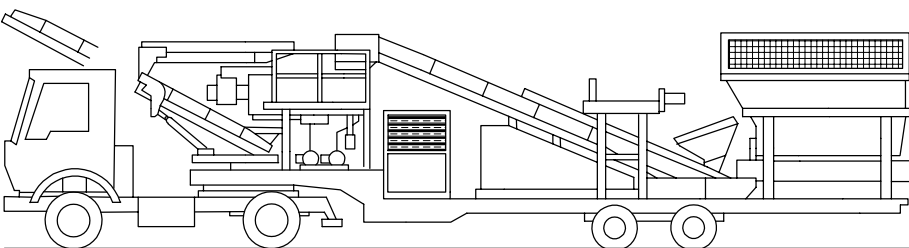
This International Standard identifies and describes machinery and equipment used in the construction and maintenance of traffic routes, roads, highways, runways, aprons, etc. It is applicable to those specialized machines/equipment intended for pavement construction and road maintenance. It does not define terms, and its figures represent a general view or outline.

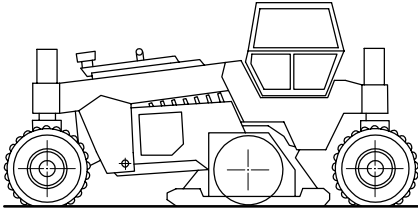
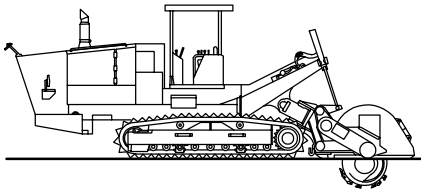
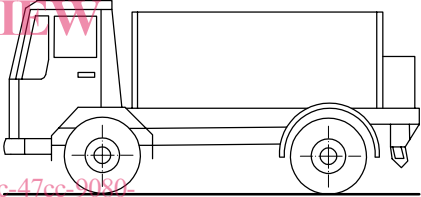
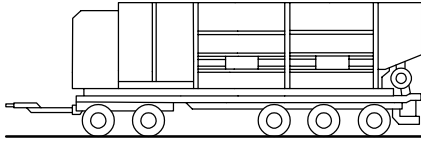
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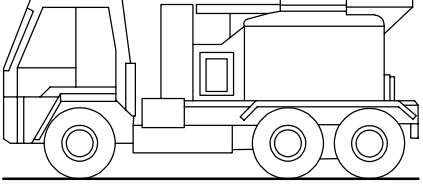
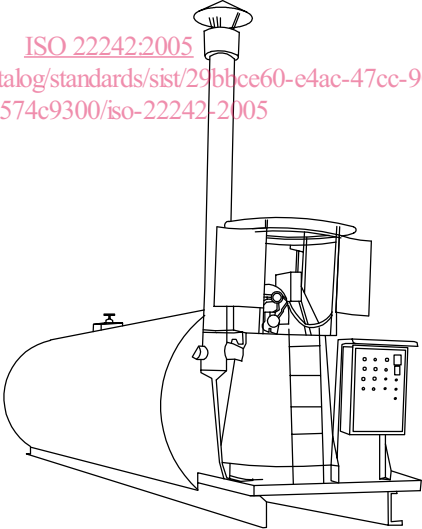
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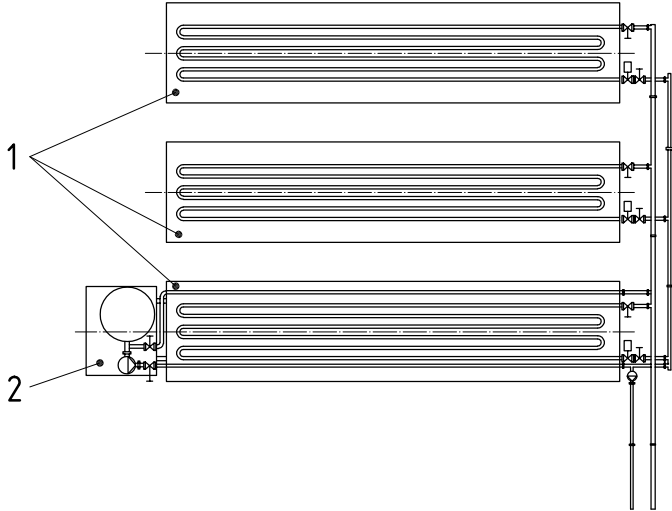
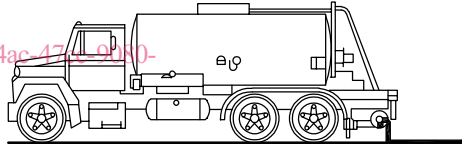
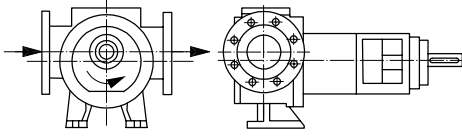
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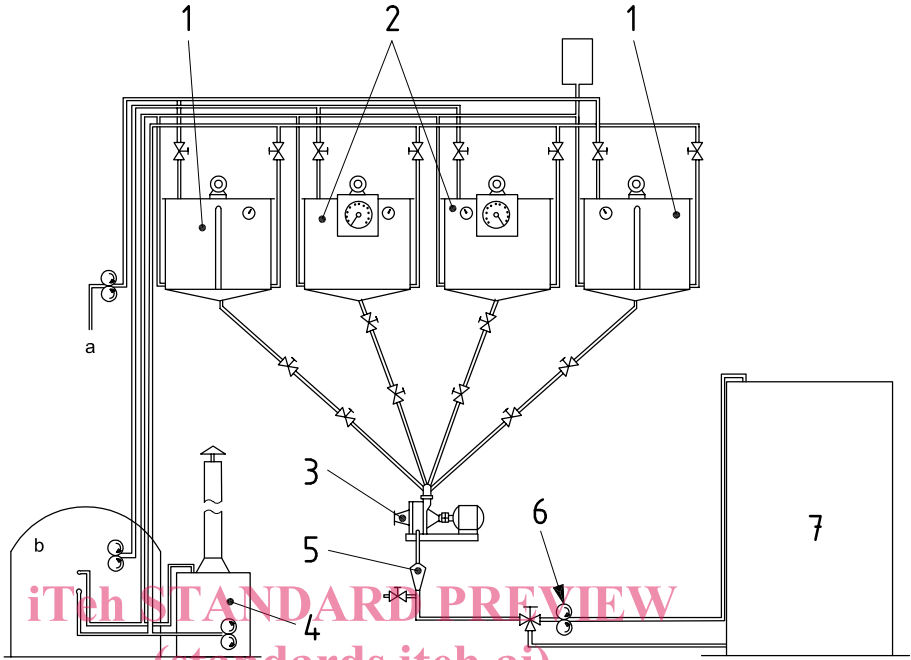
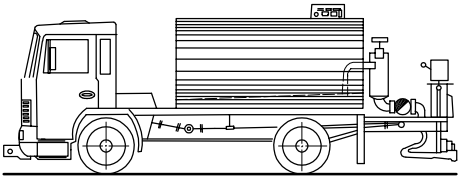
2 Machines and equipment for road construction and maintenance

Term	Identification/Description	
<p>2.1 Soil stabilization machinery and equipment</p> <p>These are used to improve the mechanical and physical properties of natural soils.</p> <p>See Figures 1 to 7.</p>		
<p>2.1.1 powder binder spreader</p>	<p>mobile machine intended for steadily spreading filler, cement, lime, etc., to improve the mechanical and physical properties of the soil material</p> <p>NOTE 1 The spreaders are designed so that the output is controlled by travel speed and proportioning devices.</p> <p>NOTE 2 See ISO 15689.</p>	 <p>Figure 1 — Powder binder spreader</p>
<p>2.1.2 soil mix plant</p>	<p>set of equipment intended for mixing fillers and/or binders, e.g. cement, lime, foamed bitumen, asphalt emulsion, with natural soil in order to improve the mechanical and physical properties of the soil material</p> <p>NOTE See Figures 2 and 3.</p>	
<p>2.1.3 stationary soil mix plant</p>	<p>soil mix plant designed for stationary use</p> <p>https://standards.itech.ai/catalog/standards/sist/29bbce60-e4ac-47cc-9080-a899574c9300/iso-22242-2005</p>  <p>Figure 2 — Stationary soil mix plant</p>	
<p>2.1.4 portable soil mix plant</p>	<p>soil mix plant capable for relocation on wheeled chassis</p>  <p>Figure 3 — Portable soil mix plant</p>	

Term	Identification/Description	
<p>2.1.5 soil stabilizer</p>	<p>self-propelled machine, towed or transported, with the function of pulverizing, breaking up, aerating, homogenizing and/or loosening existing or imported materials or pavement materials and mixing it/them with one or more added materials (filler, cement, lime, etc.)</p> <p>NOTE 1 A main purpose of the soil stabilizer's use is to improve the mechanical and physical properties of the soil material by mixing it with binders (cement, lime, foamed bitumen, emulsions, etc.) or fillers.</p> <p>NOTE 2 See ISO 15688.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Figure 4 — Wheeled central soil stabilizer with horizontal rotor</p> </div> <div style="text-align: center;">  <p>Figure 5 — Crawler-based rear soil stabilizer with horizontal rotor</p> </div> </div>	
<p>2.1.6 water dispenser</p>	<p>water tank mounted on truck, semi-trailer or trailer, containing built-in water-spraying unit, equipped with spraying bar</p> <p style="text-align: center;">ISO 22242:2005 https://standards.itech.ai/catalog/standards/sist/29bbce60-e4ac-47cc-8080-a899574c9300/iso-22242-2005</p> <div style="text-align: center;">  <p>Figure 6 — Water dispenser</p> </div>	
<p>2.1.7 slurry mixer</p>	<p>mobile machine used to mix and proportion water and cement to a suspension which is directly injected into the mixing chamber of a soil stabilizer</p> <p>NOTE The slurry mixer is either pushed or towed by the soil stabilizer.</p> <div style="text-align: center;">  <p>Figure 7 — Slurry mixer</p> </div>	

Term	Identification/Description	
<p>2.2 Machines and equipment for bituminous binders</p> <p>These are used for storing, keeping warm, melting, homogenizing, handling and/or spraying bituminous binders.</p> <p>See Figures 8 to 12.</p>		
<p>2.2.1 bituminous binders heater and smelter/asphalt cooker</p>	<p>stationary or mobile set of units intended for storing, melting, homogenizing, keeping warm and discharge bituminous binders</p> <p>NOTE The bituminous binders heater and smelter is composed of the following units:</p> <ul style="list-style-type: none"> — insulated tank; — oil or gas burner; — internal stirrer; — discharge unit in the form of gravity valve; — pressure tank or transfer pump. 	 <p>Figure 8 — Bituminous binders heater and smelter (mobile)</p>
<p>2.2.2 bituminous binders storage tank</p>	<p>stationary or trailer-mounted insulated tank, with heating unit, intended for storage of bituminous binders</p> <p style="text-align: center;">(standards.iteh.ai)</p> <p style="text-align: center;">ISO 22242:2005 https://standards.iteh.ai/catalog/standards/sist/29b1c6e60-e4ac-47cc-9080-a899574c9300/iso-22242-2005</p>  <p>Figure 9 — Bituminous binders storage tank</p>	

Term	Identification/Description	
<p>2.2.3 bitumen storage and heating plant</p>	<p>system consisting of a boiler and insulated horizontal or vertical metal tanks or underground concrete tanks intended for hot bitumen storage</p>  <p>The diagram shows three horizontal tanks stacked vertically. Each tank contains a heating coil. A boiler is connected to the bottom of the tanks. A key indicates: 1 tank with oil heating piping, 2 oil heating boiler.</p> <p>Key 1 tank with oil heating piping 2 oil heating boiler</p>	<p>Figure 10 — Bitumen storage and heating plant</p>
<p>2.2.4 bituminous binders dispenser</p>	<p>insulated and heated tank, mounted on a truck, semi-trailer or trailer, and equipped with a discharge unit in the form of a gravity valve or transfer pump</p>	 <p>The diagram shows a truck with a large cylindrical tank mounted on its chassis. A discharge unit is visible at the rear of the tank.</p> <p>Figure 11 — Bituminous binders dispenser</p>
<p>2.2.5 pump for hot bituminous binders</p>	<p>gear or vane pump with seal selected to the temperature of the bituminous binder to be delivered</p> <p>NOTE The pump can be used in a variety of different pieces of road building equipment, e.g. as a trailer-mounted pump with an attachment for joining the pump with tanks and spraying units, asphalt mixing plants and bituminous binder spreaders/sprayers.</p>	 <p>The diagram shows a gear or vane pump with a motor and shaft. It has two main ports for fluid flow.</p> <p>Figure 12 — Pump for hot bituminous binders</p>

Term	Identification/Description	
<p>2.2.6 bituminous emulsions plant</p>	<p>assembly, either stationary or capable of relocation on a wheeled chassis, composed of water and bitumen metering tanks and a homogenizing system for bituminous emulsions production</p>	 <p>Key</p> <ul style="list-style-type: none"> 1 tank for water metering 2 tank for bitumen metering 3 homogenizing unit 4 thermal oil central heating unit 5 funnel for emulsion control 6 emulsion transfer unit 7 emulsion storage tank(s) <p>a Water delivery. b Bitumen delivery.</p> <p style="text-align: center;">Figure 13 — Bituminous emulsions plant</p>
<p>2.2.7 bituminous binders spreader/sprayer</p>	<p>mobile machine used to apply a film of binder on a pavement at a predetermined application rate</p> <p>NOTE 1 The particular types can be defined by associating the operation principle, the shape of the components, the type of binder, and by specifying the spreading performances.</p> <p>NOTE 2 See ISO 15643.</p>	 <p style="text-align: center;">Figure 14 — Bituminous emulsions spreader/sprayer</p>