

CPC COOPERATIVE PATENT CLASSIFICATION

E FIXED CONSTRUCTIONS

BUILDING

E01 CONSTRUCTION OF ROADS, RAILWAYS, OR BRIDGES

E01C CONSTRUCTION OF, OR SURFACES FOR, ROADS, SPORTS GROUNDS, OR THE LIKE; MACHINES OR AUXILIARY TOOLS FOR CONSTRUCTION OR REPAIR (forming roads or like surfaces by compacting or grading snow or ice [E01H](#))

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00	Design or layout of roads, e.g. for noise abatement, for gas absorption (design or layout of sports grounds A63C 19/00 ; design or layout of airfields B64F {, of helicopter landing stages E01F 3/00 })	3/04	. Foundations produced by soil stabilisation {(soil stabilisation for road building in general E01C 7/36)}
1/002	. {Design or lay-out of roads, e.g. street systems, cross-sections (E01C 1/005 , E01C 1/007 take precedence; of footpaths, sidewalks, berms, hard shoulders or cycle tracks E01C 15/00); Design for noise abatement, e.g. sunken road (reducing transmission of structure-born noise E01C 3/06 ; arrangement of means for absorbing surfacings see the groups for the respective surfacings; other arrangements for absorbing or reflecting air transmitted road traffic noise, e.g. barriers E01F 8/00)}	3/06	. Methods or arrangements for protecting foundations from destructive influences of moisture, frost or vibration {(heating devices E01C 11/26 ; draining the subbase of roads E01F 5/00)}
1/005	. {Means permanently installed along the road for removing or neutralising exhaust gases (collecting exhaust gases with central suction systems, e.g. in workshops or tunnels, B08B 15/002)}	5/00	Pavings made of prefabricated single units (specially adapted for playgrounds or sports grounds E01C 13/04 , for footpaths, sidewalks or cycle tracks E01C 15/00 ; making artificial stones C04B ; building stones E04C ; flooring E04F)
1/007	. {Design or auxiliary structures for compelling drivers to slow down or to proceed with caution, e.g. tortuous carriageway; Arrangements for discouraging high-speed or non-resident traffic (decelerating or arresting surfacings E01C 9/007 ; road surface configuring or surface arrangements for enforcing reduced speed or required caution, e.g. speed-control humps E01F 9/529)}	5/001	. {on prefabricated supporting structures or prefabricated foundation elements except coverings made of layers of similar elements}
1/02	. Crossings, junctions or interconnections between roads on the same level {(construction of traffic islands E01F 1/00)}	5/003	. {characterised by material or composition used for beds or joints; characterised by the way of laying}
1/04	. Road crossings on different levels; Interconnections between roads on different levels	5/005	. {Individual couplings or spacer elements for joining the prefabricated units (E01C 5/10 takes precedence)}
<u>Structure of roads, playgrounds, sports grounds, airfields</u>		5/006	. . {Individual spacer elements}
3/00	Foundations for pavings (specially adapted for playgrounds or sports grounds E01C 13/02 ; foundations in general E02D)	5/008	. {made of vegetable stems, e.g. straw, thatch (of wood E01C 5/14); made of textiles (of bituminous textile webs E01C 5/12 ; of linoleum E01C 5/20)}
3/003	. {characterised by material or composition used, e.g. waste or recycled material (E01C 3/006 , E01C 3/04 and E01C 3/06 take precedence)}	5/02	. made of natural stones, e.g. sett stones {(as inserts in binders or bound thereby into greater unity E01C 5/22)}
3/006	. {made of prefabricated single units (E01C 3/06 takes precedence)}	5/04	. made of bricks {(of asphalt bricks E01C 5/12)}
3/02	. Concrete base for bituminous paving	5/06	. made of units with cement or like binders
		5/065	. . {characterised by their structure or component materials, e.g. concrete layers of different structure, special additives}
		5/08	. . Reinforced units {with steel frames (with metal upper or under layers E01C 5/22)}
		5/085	. . . {on prefabricated supporting structures or prefabricated foundation elements except coverings made of layers of similar elements}
		5/10	. . . Prestressed reinforced units {; Prestressed coverings from reinforced or non-reinforced units (prestressed concrete coverings E01C 7/16)}

5/105	. . . . {on prefabricated supporting structures or prefabricated foundation elements, except coverings made of layers of similar elements}	7/16	. . . . Prestressed concrete paving {(prestressed coverings from prefabricated concrete units E01C 5/10 ; prestressed joint constructions E01C 11/04 ; prestressed reinforcements E01C 11/20)}
5/12	. made of units with bituminous binders {or from bituminous material, e.g. asphalt mats}	7/18	. . of road-metal and bituminous binders {(for surface treatments except for penetration coverings, or for thin surface layers E01C 7/353 ; bituminous mixtures C08L 95/00)}
5/14	. made of wooden units	7/182	. . . . {Aggregate or filler materials, except those according to E01C 7/26 (E01C 7/187 , E01C 7/353 take precedence; different aggregates or fillers E01C 7/18)}
5/16	. made of metallic units {(with a filling or ground plate of other material E01C 5/22 ; for temporary pavings E01C 9/083 ; } steel gratings E01C 9/10 }	7/185	. . . . {Isolating, separating or connecting intermediate layers, e.g. adhesive layers; Transmission of shearing force in horizontal intermediate planes, e.g. by protrusions (E01C 7/187 takes precedence; adhesive layers for materials E01C 7/35)}
5/18	. made of rubber units {(of units made from other material and having a rubber upper layer E01C 5/226)}	7/187	. . . . {Repairing bituminous covers, e.g. regeneration of the covering material <i>in situ</i> , application of a new bituminous topping (application of thin surface layers with other binders E01C 7/35 ; repairing pavings in general E01C 11/005)}
5/20	. made of units of plastics, {e.g. concrete with plastics, linoleum}(E01C 5/18 takes precedence; {of textiles made of synthetic fibres E01C 5/008)}	7/20	. . . Binder incorporated in cold state, e.g. natural asphalt
5/22	. made of units composed of a mixture of materials covered by two or more of groups { E01C 5/008 }, E01C 5/02 - E01C 5/20 {except embedded reinforcing materials}	7/22	. . . Binder incorporated in hot state, e.g. heated bitumen
5/223	. . {on prefabricated supporting or prefabricated foundation units, except coverings made of layers of similar elements}	7/24	. . . Binder incorporated as an emulsion or solution (making dispersions or emulsions for road building C04B)
5/226	. . {having an upper layer of rubber, with or without inserts of other materials; with rubber inserts}	7/26	. . . mixed with other materials, e.g. cement, rubber, leather, fibre {(fibrous material reinforcements for bituminous paving E01C 11/165)}
7/00	Coherent pavings made <i>in situ</i> (specially adapted for playgrounds or sports grounds E01C 13/06 ; for footpaths, sidewalks or cycle tracks E01C 15/00)	7/262	. . . . {with fibrous material, e.g. asbestos; with animal or vegetal admixtures, e.g. leather, cork (E01C 7/265 takes precedence)}
7/02	. made of road-metal without binders	7/265	. . . . {with rubber or synthetic resin, e.g. with rubber aggregate, with synthetic resin binder (for thin overlays or surface dressings E01C 7/35)}
7/04	. . of broken stones, gravel, or like materials	7/267	. . . . {with sulfur}
7/06	. . by melting, burning, or vitrifying road-metal <i>in situ</i>	7/30	. . of road-metal and other binders, e.g. synthetic material {, i.e. resin}
7/08	. made of road-metal and binders {(E01C 7/36 takes precedence)}	7/32	. . of courses of different kind made <i>in situ</i>
7/085	. . {Aggregate or filler materials therefor; Coloured reflecting or luminescent additives therefor (thin surface layers or surface dressings E01C 7/35)}	NOTE This group is limited to coverings consisting of layers with different binders, except for thin intermediate or surface layers, which are classified in group E01C 7/35	
7/10	. . of road-metal and cement or like binders (cement or like binders, composition of mortars C04B)	7/325	. . . . {Joining different layers, e.g. by adhesive layers; Intermediate layers, e.g. for the escape of water vapour, for spreading stresses (sliding layers E01C 7/34)}
7/12	. . . Mortar-bound paving	7/34	. . . made of several courses which are not bound to each other {; Separating means therefor, e.g. sliding layers (in or under concrete coverings E01C 7/145)}
7/14	. . . Concrete paving {(from concrete prepared <i>in situ</i> E01C 7/12 ; small individual units from concrete cast <i>in situ</i> E01C 9/001 ; arrangement or construction of joints E01C 11/04 ; reinforcements E01C 11/18)}	7/35	. . Toppings or surface dressings; Methods of mixing, impregnating, or spreading them {(devices therefor E01C 19/00 ; mortar-macadam pavings E01C 7/12 ; bituminous penetration coverings E01C 7/18)}
7/142	. . . . {Mixtures or their components, e.g. aggregate (E01C 7/147 , E01C 7/355 take precedence; different layers of different composition E01C 7/14)}		
7/145	. . . . {Sliding coverings, underlayers or intermediate layers (isolating underlayers E01C 3/06 ; sliding layers between coverings of different materials E01C 7/34); Isolating or separating intermediate layers; Transmission of shearing force in horizontal intermediate planes, e.g. by protrusions, by inlays (anchoring new concrete wearing layers on old concrete paving E01C 7/147)}		
7/147	. . . . {Repairing concrete pavings, e.g. joining cracked road sections by dowels, applying a new concrete covering (applying thin surface layers with other binder E01C 7/35 ; repairing pavings in general E01C 11/005 ; roughening by means of tools E01C 11/24)}		

- 7/351 . . . {with exclusively hydraulical binders; Aggregate, fillers or other additives for application on or in the surface of toppings with exclusively hydraulic binders}
- 7/353 . . . {with exclusively bituminous binders; Aggregate, fillers or other additives for application on or in the surface of toppings with exclusively bituminous binders, e.g. for roughening or clearing}
- 7/355 . . . {with exclusively rubber as binder; Aggregate, fillers or other additives for application on or in the surface of toppings having exclusively rubber as binder}
- 7/356 . . . {with exclusively synthetic resin as a binder; Aggregate, fillers or other additives for application on or in the surface of toppings having exclusively synthetic resin as binder}
- 7/358 . . . {with a combination of two or more binders according to groups [E01C 7/351 - E01C 7/356](#)}
- 7/36 . by subjecting soil to stabilisation {(E01C 7/06 takes precedence; foundations [E01C 3/04](#); soil conditioning or soil stabilising materials [C09K 17/00](#); soil stabilisation devices for road construction [E01C 21/00](#))}
- 9/00 Special pavings** (specially adapted for playgrounds or sports grounds [E01C 13/00](#), for footpaths, sidewalks or cycle tracks [E01C 15/00](#)); **Pavings for special parts of roads or airfields** (pavement lights [E01C 17/00](#); manholes or like covers or frames [E02D 29/14](#))
- 9/001 . {Paving elements formed in situ; Permanent shutterings therefor (removable shutterings [E01C 19/502](#); moulding machines therefor [E01C 19/508](#)); Inlays or reinforcements which divide the cast material in a great number of individual units (reinforcement girders which do not break the cohesion of the covering material [E01C 11/16](#), [E01C 11/185](#))}
- 9/002 . {Coverings, the surface of which consists partly of prefabricated units and partly of sections made in situ}
- 9/004 . {Pavings specially adapted for allowing vegetation (individual spacer elements [E01C 5/006](#))}
- 9/005 . . {Coverings around trees forming part of the road (protecting plants in general [A01G 13/00](#))}
- 9/007 . {Vehicle decelerating or arresting surfacings or surface arrangements, e.g. arrester beds (road surface configuration or surface arrangements for enforcing reduced speed, e.g. speed-control humps [E01F 9/529](#)); Escape roads, e.g. for steep descents, for sharp bends}
- 9/008 . {Paving take-off areas for vertically starting aircraft (landing platforms for helicopters [E01F 3/00](#))}
- 9/02 . Wheel tracks (rail tracks for guiding vehicles [E01B 25/28](#))
- 9/04 . Pavings for railroad level-crossings
- 9/06 . Pavings adjacent tramways rails {; Pavings comprising railway tracks}
- 9/08 . Temporary pavings {(E01C 9/008 takes precedence } ; steel gratings [E01C 9/10](#))
- 9/083 . . {made of metal, e.g. plates, network}
- 9/086 . . {made of concrete, wood, bitumen, rubber or synthetic material or a combination thereof}
- 9/10 . Steel gratings {; Gratings made of material other than steel}({[E01C 9/001 - E01C 9/02](#), [E01C 9/06](#) take precedence; metal gratings for bridge floorings [E01D 19/125](#); } gully gratings [E03F 5/06](#))
- 11/00 Details of pavings** {(E01C 1/005, E01C 5/003, [E01C 5/005](#), [E01C 7/145](#), [E01C 7/185](#), [E01C 7/325](#) take precedence)}
- 11/005 . {Methods or materials for repairing pavings ([E01C 7/35](#) takes precedence; for concrete coverings [E01C 7/147](#); for bituminous coverings [E01C 7/187](#); devices for repair works [E01C 23/06](#); repairing bridge floorings [E01D 22/00](#))}
- 11/02 . Arrangement or construction of joints {(for pavings consisting of prefabricated units [E01C 5/00](#))}; Methods of making joints {(machines therefor [E01C 23/02](#), [E01C 23/09](#); removable joint shutterings [E01C 23/021](#))}; Packing for joints (sealing joints not restricted to road or airfield paving [E04B 1/68](#))
- 11/04 . . for cement concrete paving {(E01C 9/001 takes precedence)}
- 11/045 . . . {specially adapted for prestressed paving}
- 11/06 . . . Methods of making joints
- 11/08 . . . Packing of metal {(E01C 11/045 takes precedence)}
- 11/10 . . . Packing of plastic or elastic materials {, e.g. wood, resin ([E01C 11/045](#) takes precedence)}
- 11/103 {Joints with packings prepared only in situ; Materials therefor}
- 11/106 {Joints with only prefabricated packing; Packings therefor}
- 11/12 . . . Packing of metal and plastic or elastic materials {(E01C 11/045 takes precedence)}
- 11/123 {Joints with only metal and in situ prepared packing or filling}
- 11/126 {Joints with only metal and prefabricated packing or filling}
- 11/14 . . . Dowel assembly {; Design or construction of reinforcements in the area of joints (coupling devices for prefabricated units [E01C 5/005](#); combined with characteristic packings [E01C 11/08 - E01C 11/12](#); removable holders [E01C 23/045](#))}
- 11/16 . Reinforcements {(as anchoring elements between layers [E01C 7/145](#), [E01C 7/185](#), [E01C 7/325](#) } ; for building in general [E04C](#))}
- 11/165 . . {particularly for bituminous or rubber- or plastic-bound pavings (bituminated textile webs [E01C 5/12](#))}
- 11/18 . . for cement concrete pavings {(prefabricated reinforced units [E01C 5/08](#))}
- 11/185 . . . {the reinforcements extending up to the surface, e.g. anti-slip gratings (for dividing concrete in a great number of individual units [E01C 9/001](#))}
- 11/20 . . . for prestressed concrete pavings {(from prefabricated concrete units, similar prestressed units [E01C 5/10](#))}
- 11/22 . Gutters; Kerbs (kerbs specially adapted for alerting road users [E01F 9/535](#)){; Surface drainage of streets, roads or like traffic areas (for sports grounds [E01C 13/00](#))}

11/221	. . { Kerbs or like edging members, e.g. flush kerbs, shoulder retaining means (specially adapted for guiding or warning traffic or for display purposes E01F 9/535); Joint members, connecting or load-transfer means specially for kerbs }	13/003	. { Construction of, or surfacings for, rinks or tracks for roller skating, skate-boarding or the like (layout of roller-skating rinks A63C 19/10) }
11/222	. . . { Raised kerbs, e.g. for sidewalks (E01C 11/223 , E01F 9/535 , E01F 9/547 take precedence; preformed sidewalk paving with integral kerb E01C 15/00 ; specially for traffic islands E01F 1/00); Integrated or portable means for facilitating ascent or descent }	2013/006	. { Transportable sport surfaces for multipurpose stadiums }
11/223	. . . { Kerb-and-gutter structures; Kerbs with drainage openings channel or conduits, e.g. with out- or inlets, with integral gutter or with channel formed into the kerb (gutters, subsurface channels <i>per se</i> E01C 11/227 ; gullies adapted to be used with kerbs, gully gratings E03F 5/04 , E03F 5/06); Kerbs adapted to house cables or pipes, or to form conduits }	13/02	. Foundations, e.g. with drainage or heating arrangements { (E01C 13/003 , E01C 13/083 , E01C 13/10 take precedence; drainage of soil E02B 11/00) }
11/224	. . { Surface drainage of streets (draining the subbase of roads, by trenches E01F 5/00 , by sewers E03F ; draining arrangements for bridges E01D 19/086) }	13/04	. Pavings made of prefabricated single units (E01C 13/003 , E01C 13/06), E01C 13/08 , E01C 13/10 take precedence }
11/225	. . . { Paving specially adapted for through-the-surfacing drainage, e.g. perforated, porous; Preformed paving elements comprising, or adapted to form, passageways for carrying off drainage (E01C 9/004 , E01C 9/008 , E01C 9/08 , E01C 9/10 , E01C 11/228 , E01C 13/00 take precedence) }	13/045	. . { the prefabricated single units consisting of or including bitumen, rubber or plastics }
11/226	. . . . { Coherent pavings }	13/06	. Pavings made <i>in situ</i> , {e.g. for sand grounds, clay courts E01C 13/003 }, (E01C 13/08 , E01C 13/10 take precedence)
11/227	. . . { Gutters; Channels (E01C 11/223 takes precedence; permanently installed flushing means E01H 3/04); Roof drainage discharge ducts set in sidewalks }	13/065	. . { at least one <i>in situ</i> layer consisting of or including bitumen, rubber or plastics }
11/228	. . . . { Gutters for porous pavings }	13/08	. Surfaces simulating grass {; Grass-grown sports grounds (grass-like surfaces for skiing E01C 13/12) }
11/229	. . . . { Shallow gutters, i.e. gutters forming a minor pothole }	13/083	. . { Construction of grass-grown sports grounds; Drainage, irrigation or heating arrangements therefor }
11/24	. Methods or arrangements for preventing slipperiness or protecting against influences of the weather { (measures taken in connection with the foundation E01C 3/06 ; paving elements with anti-slip inlays E01C 5/22 ; aggregates resisting to grinding E01C 7/085 , E01C 7/142 , E01C 7/182 ; specially for surface layers E01C 7/35 ; reinforcements extending up to the surface E01C 11/16 , E01C 11/18 , E01C 11/185 ; drainage E01C 11/22 ; windscreens E01F 7/02 ; snow fences E01F 7/02 ; combating fog E01H 13/00) }	2013/086	. . { Combination of synthetic and natural grass }
11/245	. . { for preventing ice formation or for loosening ice, e.g. special additives to the paving material, resilient coatings (E01C 11/26 takes precedence; built-in sanding or sprinkling devices E01H 10/00) }	13/10	. for artificial surfaces for outdoor or indoor practice of snow or ice sports (E01C 13/08 takes precedence; production of snow or ice for winter sports or similar recreational purposes F25C 3/00) }
11/26	. . Permanently installed heating or blowing devices { (specially for combating fog E01H ; built-in melting devices for dislodged snow E01H 5/102); Mounting thereof }	13/102	. . { Civil engineering aspects of the construction of ice rinks or sledge runs made from frozen-liquid, semi-liquid or frozen-pasty substances, e.g. portable basins }
11/265	. . . { Embedded electrical heating elements (in floors F24D 13/00); Mounting thereof }	13/105	. . . { of artificially refrigerated rinks or runs, e.g. cooled rink floors or swimming pools or tennis courts convertible into rinks }
13/00	Pavings or foundations specially adapted for playgrounds or sports grounds; {Drainage, irrigation or heating of sports grounds}(general layout A63C 19/00)	13/107	. . { Non-frozen surfacings for ice, skating or curling rinks or for sledge runs; Rinks or runs with such surfacings }
		13/12	. . for snow sports {, e.g. skiing or ski tow track (mechanical ski trails A63C 19/10) }
		15/00	Pavings specially adapted for footpaths, sidewalks or cycle tracks
		17/00	Pavement lights, i.e. translucent constructions forming part of the surface (blocks specially designed for marking roads E01F 9/524)
		<u>Machine, tools, or auxiliary devices for constructing or repairing the surfacing of roads or like structures (constructing the road bed E02D, E02F)</u>	
		19/00	Machines, tools or auxiliary devices for preparing or distributing paving materials, for working the placed materials, or for forming, consolidating, or finishing the paving (surface stabilisation E01C 21/00; apparatus specially adapted for reconditioning or repairing paving E01C 23/00)
		19/002	. { Apparatus for preparing and placing the materials and for consolidating or finishing the paving }
		19/004	. { Devices for guiding or controlling the machines along a predetermined path (for graders or bulldozers E02F 3/841 ; for other soil-shifting machines E02F 9/2045) }

- 19/006 . . {by laser or ultrasound}
- 19/008 . . {by reference lines placed along the road, e.g. wires co-operating with feeler elements ([E01C 19/006](#) takes precedence)}
- 19/02 . for preparing the materials {([E01C 19/002](#), [E01C 19/45](#), [E01C 19/46](#), [E01C 21/00](#), [E01C 23/065](#) take precedence; producing hydraulic cement concrete in general [B28C 5/00](#) - [B28C 9/00](#))}
- 19/025 . . {for preparing hydraulic-cement-bound mixtures of which at least one ingredient has previously been deposited on the surface, e.g. *in situ* mixing of concrete}
- 19/05 . . Crushing, pulverising or disintegrating apparatus ({preparing and placing involving breaking [E01C 19/466](#)}; in general [B02C](#)); Aggregate screening, cleaning, {drying} or heating apparatus; {Dust-collecting arrangements specially adapted therefor}
- 19/08 . . Apparatus for transporting and {heating or} melting asphalt, bitumen, tar, or the like (stationarily-arranged melting boilers for tar, asphalt, or the like, in general [C10C 3/12](#))
- 19/10 . . Apparatus or plants for premixing or precoatting aggregate or fillers with non-hydraulic binders, e.g. with bitumen, with resins, {i.e. producing mixtures or coating aggregates otherwise than by penetrating or surface dressing}; Apparatus for premixing non-hydraulic mixtures prior to placing or for reconditioning salvaged non-hydraulic compositions {([E01C 19/08](#), [E01C 19/21](#), [E01C 21/00](#), [E01C 23/065](#) take precedence)}
- 19/1004 . . . {Reconditioning or reprocessing bituminous mixtures, e.g. salvaged paving, fresh patching mixtures grown unserviceable; Recycling salvaged bituminous mixtures; Apparatus for the in-plant recycling thereof ([E01C 19/1036](#) takes precedence)}
- 19/1009 . . . {Plant wherein type or construction of the mixer are irrelevant ([E01C 19/1004](#) takes precedence)}
- 19/1013 . . . {Plant characterised by the mode of operation or the construction of the mixing apparatus; Mixing apparatus; ([E01C 19/1004](#), [E01C 19/1054](#) take precedence)}
- 19/1018 {Coating the solid ingredients by immersion in a bath of binder}
- 19/1022 {Coating the solid ingredients by passing same through a shower or cloud of binder ([E01C 19/21](#), [E01C 19/4813](#) take precedence)}
- 19/1027 {Mixing in a rotary receptacle}
- 19/1031 {the mixture being discharged continuously ([E01C 19/1036](#) takes precedence)}
- 19/1036 {for in-plant recycling or for reprocessing, e.g. adapted to receive and reprocess an addition of salvaged material, adapted to reheat and remix cooled-down batches}
- 19/104 {Mixing by means of movable members in a non-rotating mixing enclosure, e.g. stirrers ([E01C 19/08](#) takes precedence)}
- 19/1045 {the mixture being discharged continuously}
- 19/105 {Mixing or coating by a combination of methods covered by [E01C 19/1018](#) - [E01C 19/104](#), excluding [E01C 19/1036](#)}
- 19/1054 . . . {Preparing mixtures of which at least part of the solid ingredients has previously been deposited on the surface, excluding penetrating or surface dressing, e.g. *in situ* mixing, mixing involving lifting of spread or windrowed aggregate (preparing and placing such bituminous mixtures [E01C 19/463](#); recycling in place or on the road [E01C 23/065](#))}
- 19/1059 . . . {Controlling the operations; Devices solely for supplying or proportioning the ingredients}
- 19/1063 {Controlling the operations ([E01C 19/1068](#) takes precedence)}
- 19/1068 {Supplying or proportioning the ingredients}
- 19/1072 {the solid ingredients}
- 19/1077 {the liquid ingredients}
- 2019/1081 . . . {Details not otherwise provided for}
- 2019/1086 {Mixing containers having concentric drums}
- 2019/109 {Mixing containers having a counter flow drum, i.e. the flow of material is opposite to the gas flow}
- 2019/1095 {Mixing containers having a parallel flow drum, i.e. the flow of material is parallel to the gas flow}
- 19/12 . for distributing granular or liquid materials {([E01C 19/002](#), [E01C 19/45](#), [E01C 19/46](#), [E01C 19/48](#), [E01C 23/03](#), [E01C 23/065](#)), [E01C 23/07](#) take precedence; for filling joints or grooves [E01C 23/02](#), [E01C 23/09](#)}
- 19/15 . . for laying-down uncoated stone or similar materials, or for striking-off or spreading same without compacting, e.g. for crushed rock base courses, sand cushions for paving ({[E01C 19/466](#)}, [E01C 19/52](#) take precedence; distributing [E01C 19/20](#); {laying down and rolling [E01C 19/482](#))}
- 19/16 . . for applying or spreading liquid materials, e.g. bitumen slurries ({[E01C 19/1054](#), [E01C 19/21](#), } [E01C 19/45](#), {[E01C 19/4813](#), [E01C 21/00](#), } [E01C 23/02](#), [E01C 23/03](#), {[E01C 23/065](#), [E01C 23/096](#), [E01C 23/0973](#), [E01C 23/0993](#)}, [E01C 23/16](#) take precedence; {spreading-out or smoothing-down means as parts of spraying apparatus [E01C 19/178](#))}
- 19/17 . . . Application by spraying {or throwing}
- 19/172 {Apparatus with discharge by surpressure in tank}
- 19/174 {Apparatus with pump-discharge}
- 19/176 {Spraying or throwing elements, e.g. nozzles; Arrangement thereof or supporting structures therefor, e.g. spray-bars}
- 19/178 {Elements or attachments for spreading-out or smoothing-down the applied material, e.g. brushes}
- 19/18 . . Devices for distributing road-metals mixed with binders, e.g. cement, bitumen, without consolidating or ironing effect ([E01C 19/20](#), {[E01C 19/21](#), [E01C 19/46](#)}, [E01C 19/47](#), {[E01C 19/48](#), [E01C 21/00](#), [E01C 23/065](#), [E01C 23/07](#)} take precedence; conveying installations for concrete or the like [B65G](#))

19/182	. . . {solely for depositing}	19/23	. . Rollers therefor; Such rollers usable also for compacting soil (E01C 19/41 , E01C 19/43 , E01C 19/52 , E01C 23/065) take precedence; specially adapted for agricultural purposes A01B 29/00 ; garden rollers A01G 20/35 ; making or maintaining surfaces of snow or ice E01H 4/00 ; solely for soil compaction E02D 3/026)
19/185	. . . {for both depositing and spreading-out or striking-off the deposited mixture (laying-down the materials and consolidating them, or finishing the surface, E01C 19/48)}		
19/187	. . . {solely for spreading-out or striking-off deposited mixtures, e.g. spread-out screws, strike-off boards}		
19/20	. . Apparatus for distributing, e.g. spreading, granular or pulverulent materials, e.g. sand, gravel, salt, dry binders (E01C 19/21 , E01C 19/4813 , E01C 19/482 , E01C 23/098 , E01C 23/166 take precedence; } fertiliser distributors A01C 15/00 {; permanently-installed devices for applying gritting or thawing materials E01H 10/005 ; mobile spreaders specially adapted for treating wintry roads E01H 10/007)}	19/231	. . . {with both elastically-deformable and rigid rolling elements, e.g. pneumatic-tyred compactor with selectively operative or inoperative steel-faced roll (with auxiliary elastically-deformable rolling elements for working only restricted zones E01C 19/27 ; rigid-roll rollers with conventional pneumatic-tyred tractors or traction-units E01C 19/25 , E01C 19/26 , E01C 19/28)}
19/2005	. . . {without driven loosening, discharging or spreading (E01C 19/205 takes precedence)}	19/233	. . . . {the rigid rolling elements being vibrated or subjected to impacts (with vibrated elastically-deformable rolling elements E01C 19/287)}
19/201	. . . {with driven loosening, discharging or spreading parts, e.g. power-driven, drive derived from road-wheels (E01C 19/205 takes precedence)}	19/235	. . . {Rolling apparatus designed to roll following a path other than essentially linear, e.g. epicycloidal}
19/2015	. . . . {solely reciprocating, swinging to-and-fro, jolting or vibrating, e.g. oscillating stirrers, shaking spreading shoots}	19/236	. . . {Construction of the rolling elements, e.g. surface configuration, rolling surface formed by endless track}
19/202	. . . . {solely rotating, e.g. discharging and spreading drums}	19/238	. . . {Wetting, cleaning or heating rolling elements, e.g. oiling, wiping, scraping}
19/2025	. . . . {Throwers with substantially horizontal axis, e.g. drums or brushes rotated to fling the material at the surface}	19/24	. . . hand propelled (E01C 19/235 , E01C 19/27 - E01C 19/29 , E01C 19/41) take precedence)
19/203	. . . . {Centrifugal spreaders with substantially vertical axis}	19/25	. . . propelled by animals or vehicles (E01C 19/235 , E01C 19/26 - E01C 19/29 take precedence)
19/2035	. . . . {both rotating parts and reciprocating, oscillating, jolting or vibrating parts}	19/255	. . . . {by vehicles placed on the rolling device; provided with means for facilitating rapid road transport, e.g. retractable transport wheels}
19/204	. . . . {Throwers or centrifugal spreaders, e.g. spinner spreader with oscillating stirrer}	19/26	. . . self-propelled or fitted to road vehicles (E01C 19/231 , E01C 19/235 , E01C 19/27 - E01C 19/29 take precedence)
19/2045	. . . . {spreading by means of an endless belt or like conveyor}	19/262	. . . . {pedestrian-controlled, e.g. with safety arrangements for operator}
19/205	. . . {the material being spread by means of a gaseous current}	19/264	. . . . {with attachments for work other than rolling, e.g. grading, scarifying (rollers fitted to road-construction or earth-moving machinery E01C 19/266)}
2019/2055	. . . {Details not otherwise provided for}	19/266	. . . . {fitted to vehicles, road-construction or earth-moving machinery, e.g. auxiliary roll readily movable to operative position (E01C 19/268 , E01C 19/4806 , E01C 19/488 , E01C 19/52 , E01C 21/00 , E01C 23/065 take precedence); provided with means for facilitating transport; Means for transporting rollers; Arrangements or attachments for converting vehicles into rollers, e.g. rolling sleeves for wheels}
2019/206	. . . . {Hand operated spreading devices}	19/268	. . . . {designed for rolling surfaces not situated in the plane of the riding surface of the apparatus, e.g. stepped-down surfaces, sloping edge of surfacing (trench rollers E02D 3/032 ; slope rollers E02D 3/039)}
2019/2065	. . . . {Sensing the quantity of the material actually being distributed}		
2019/207	. . . . {Feeding the distribution means}		
2019/2075	. . . . {with longitudinal conveyor belt}		
2019/208	. . . . {with longitudinal auger}		
2019/2085	. . . . {with transverse conveyor belt}		
2019/209	. . . . {with transverse auger}		
2019/2095	. . . . {by tipping}		
19/21	. . for simultaneously but separately applying liquid material and granular or pulverulent material, e.g. bitumen and grit, with or without spreading {(with rolling E01C 19/4813); for filling grooves and gritting the filling}		
19/22	. . for consolidating or finishing laid-down unset materials (E01C 19/002 , E01C 19/48 , E01C 21/00 E01C 23/02 E01C 23/065 take precedence; apparatus for generating vibrations in general B06B)		

- 19/27 . . . with elastically-deformable rolling elements, e.g. pneumatic tyres ([{E01C 19/231 takes precedence}](#)); vibrating or impacting [E01C 19/28](#))
- 19/28 . . . Vibrated rollers or rollers subjected to impacts, e.g. hammering blows ([{E01C 19/235, } E01C 19/29, {E01C 19/41}](#) take precedence; {combined with non-vibrated elastically-deformable rolling elements [E01C 19/233](#)})
- 19/281 {propelled by hand or by vehicles, e.g. towed ([E01C 19/285 - E01C 19/288](#) take precedence)}
- 19/282 {self-propelled, e.g. with an own traction-unit ([E01C 19/285 - E01C 19/288](#) take precedence)}
- 19/283 {pedestrian-controlled, e.g. with safety arrangements for operator}
- 19/285 {with attachments for work other than rolling, e.g. dozer blades, shoes for conversion into plate vibrator; fitted to vehicles, road-construction or earth-moving machinery ([E01C 19/29, E01C 19/4806, E01C 19/488, E01C 19/52, E01C 21/00, E01C 23/065](#) take precedence); vibrated or the like auxiliary rolls, e.g. for rolling road edges; provided with means for facilitating transport}
- 19/286 {Vibration or impact-imparting means; Arrangement, mounting or adjustment thereof; Construction or mounting of the rolling elements, transmission or drive thereto, e.g. to vibrator mounted inside the roll ([E01C 19/287 and E01C 19/288](#) take precedence)}
- 19/287 {with vibrated elastically-deformable or elastomer-faced rolling elements or with such elements subjected to impacts, e.g. multi-roll vibratory apparatus with an endless elastomer belt passed around the rolls (rollers with both non-vibrated, elastically-deformable and vibrated rigid rolling elements [E01C 19/233](#))}
- 19/288 {adapted for monitoring characteristics of the material being compacted, e.g. indicating resonant frequency, measuring degree of compaction, by measuring values, detectable on the roller; using detected values to control operation of the roller, e.g. automatic adjustment of vibration responsive to such measurements}
- 19/29 . . . Rolling apparatus adapted to apply a rolling pressure less than its weight, e.g. roller finishers travelling on formrail {combined with spread-out, strike-off or smoothing means; Rolling elements with controlled penetration or a controlled path of movement in a vertical plane, e.g. controlled by the formrails, by guides ensuring a desired configuration of the rolled surface}
- 19/30 . . Tamping or vibrating apparatus other than rollers {; Devices for ramming individual paving elements}([{E01C 19/41, E01C 19/43, E01C 19/4833, E01C 19/488, E01C 19/4886, E01C 19/52, E01C 21/00, } E01C 23/02, E01C 23/04](#) take precedence; vibrated depositing devices [E01C 19/12](#); tamping or vibrating rollers [E01C 19/28](#); portable percussion tools [B25D](#); tamping or vibrating soil [E02D 3/046](#))
- 19/32 . . . Hand-held hand-actuated rammers or tampers
- 19/34 . . . Power-driven rammers or tampers {, e.g. air-hammer impacted shoes for ramming stone-sett paving; Hand-actuated ramming or tamping machines, e.g. tampers with manually hoisted dropping weight}
- 19/35 Hand-held or hand-guided tools ([E01C 19/36 - E01C 19/40](#) take precedence)
- 19/36 with direct-acting explosion chambers
- 19/38 with means specifically for generating vibrations {, e.g. vibrating plate compactors, immersion vibrators ([E01C 19/40, E01C 19/41](#) take precedence)}
- 19/40 adapted to impart a smooth finish to the paving, e.g. tamping or vibrating finishers
- NOTE**
- When classifying in group [E01C 19/402](#), classification is also made in groups [E01C 19/405](#) or [E01C 19/407](#) if of interest
- 19/402 {the tools being hand-guided}
- 19/405 {with spreading-out, levelling or smoothing means other than the tamping or vibrating means for compacting or smoothing, e.g. with screws for spreading-out the previously dumped material, with non-vibratory lengthwise reciprocated smoothing beam ([E01C 19/407](#) takes precedence)}
- 19/407 {with elements or parts partly or fully immersed in or penetrating into the material to act thereon, e.g. immersed vibrators or vibrating parts, kneading tampers, spaders}
- 19/41 . . Apparatus having both rolling tools and ramming, tamping, or vibrating tools
- 19/42 . . Machines for imparting a smooth finish to freshly-laid paving courses other than by rolling, tamping or vibrating ([for distributing only E01C 19/12; {hand-actuated smoothing tools E01C 19/44}](#))
- 19/43 . . Machines or arrangements for roughening or patterning freshly-laid paving courses, e.g. indenting rollers
- 19/44 . . Hand-actuated tools other than rollers, tampers, or vibrators, specially adapted for imparting a required finish to freshly-laid paving courses ([E01C 19/43, {E01C 23/02}](#) take precedence)
- 19/45 . . Portable apparatus for preparing, or for preparing and applying to the road, compound liquid binders, e.g. emulsified bitumen, fluxed asphalt ([applying only E01C 19/16](#))
- 19/46 . . for preparing and placing the materials {, e.g. slurry seals}([{E01C 19/002, } E01C 19/45, {E01C 21/00, E01C 23/065}](#) take precedence)

- 19/463 . . {Bituminous mixtures of which at least part of the solid ingredients has previously been deposited on the surface, e.g. with lifting of spread or windrowed aggregate}
- 19/466 . . {Solid materials, e.g. crushing same}
- 19/47 . . Hydraulic cement concrete mixers combined with distributing means specially adapted for road building ([E01C 19/025 takes precedence](#) ; [concrete mixers per se B28C](#))
- 19/475 . . . {Distributing means therefor, e.g. boom-and-bucket arrangements}
- 19/48 . for laying-down the materials and consolidating them, or finishing the surface {, e.g. slip forms therefor, forming kerbs or gutters in a continuous operation [in situ](#) ([E01C 19/002](#), [E01C 23/065 take precedence](#); devices for guiding or controlling the machines along a predetermined path [E01C 19/004](#))}
- 19/4806 . . {with solely rollers for consolidating or finishing ([E01C 19/4886 takes precedence](#); combined with other consolidating or finishing means [E01C 19/488](#))}
- 19/4813 . . . {the materials being simultaneously but separately applied binders and granular or pulverulent material (such application [per se](#) [E01C 19/21](#))}
- 19/482 . . . {the materials being uncoated stone or similar granular materials, e.g. sand (laying-down uncoated stone or similar materials [per se](#) [E01C 19/15](#); distributing granular or pulverung materials [per se](#) [E01C 19/20](#))}
- 19/4826 . . . {the materials being aggregate mixed with binders ([distributing per se](#) [E01C 19/18](#))}
- 19/4833 . . {with tamping or vibrating means for consolidating or finishing, e.g. immersed vibrators, with or without non-vibratory or non-percussive pressing or smoothing means ([E01C 19/4806](#), [E01C 19/4886 take precedence](#); combined with rollers [E01C 19/488](#))}
- 19/484 . . . {Rail- or like-borne apparatus, e.g. sliding on side forms, rolling on form rails, kerbs or like trackways}
- 19/4846 {with non-vibratory or non-percussive pressing or smoothing means, e.g. trailing smoothing pans, plates pressing the materials processed by immersed vibrators; with supplemental elements penetrating the paving to work the material thereof, e.g. rodding means}
- 19/4853 . . . {Apparatus designed for railless operation, e.g. crawler-mounted, provided with portable trackway arrangements}
- 19/486 {with non-vibratory or non-percussive pressing or smoothing means; with supplemental elements penetrating the paving to work the material thereof}
- 19/4866 . . {with solely non-vibratory or non-percussive pressing or smoothing means for consolidating or finishing ([E01C 19/4886 takes precedence](#); combined with rollers [E01C 19/488](#))}
- 19/4873 . . . {Apparatus designed for railless operation}
- 19/488 . . {with rollers for consolidating or finishing combined with tamping, vibrating, pressing or smoothing consolidation or finishing means ([E01C 19/4886 takes precedence](#))}
- 19/4886 . . {for forming in a continuous operation kerbs, gutters, berms, safety kerbs, median barriers or like structures [in situ](#), e.g. by slip-forming, by extrusion (removable forms for kerbs, gutters or similar structures [E01C 19/506](#); making conduits [in situ](#) [E02D 29/10](#))}
- 19/4893 . . . {Apparatus designed for railless operation}
- 19/50 . Removable forms or shutterings for road-building purposes ([E01C 23/02](#), [E01C 23/04 take precedence](#); permanent forms [E01C 3/00 - E01C 7/00](#), [E01C 9/00 - E01C 17/00](#) ; slip forms [E01C 19/48](#)); Devices or arrangements for forming individual paving elements, e.g. kerbs, [in situ](#)
- 19/502 . . {Removable forms or shutterings, e.g. side forms; Removable supporting or anchoring means therefor, e.g. stakes (for forming individual elements [E01C 19/508](#); for grooves or like channels [E01C 23/021](#))}
- 19/504 . . . {adapted to, or provided with, means to maintain reinforcing or load transfer elements in a required position (removable supports for positioning reinforcing or load transfer elements in general [E01C 23/045](#))}
- 19/506 . . . {for kerbs, gutters or similar structures, e.g. raised portions, median barriers}
- 19/508 . . {Devices or arrangements for forming individual paving elements [in situ](#), e.g. by sectioning a freshly-laid slab (permanent forms therefor [E01C 9/001](#); imprinting freshly-laid paving to simulate stones [E01C 19/43](#); cutting sett paving [E01C 23/0906](#))}
- 19/52 . Apparatus for laying individual preformed surfacing elements, e.g. kerbstones
- 19/522 . . {Apparatus for laying the elements by rolling or unfolding, e.g. for temporary pavings}
- 19/524 . . {using suction devices}
- 19/526 . . {hand operated ([E01C 19/524 takes precedence](#))}
- 19/528 . . . {with wheels}
- 21/00 Apparatus or processes for surface {soil} stabilisation for road building or like purposes, e.g. mixing local aggregate with binder ([recycling in place or on the road involving soil stabilisation](#) [E01C 23/065](#)) ; stabilising soil under existing surfacing [E01C 23/10](#); soil-conditioning or soil-stabilising materials [C09K 17/00](#); soil consolidation in general [E02D 3/12](#))**
- 21/02 . Fusing, calcining, or burning soil [in situ](#) {(improving soil by thermal means in general [E02D 3/11](#); devices for heating foundation or paving [E01C 23/14](#))}
- 23/00 Auxiliary devices or arrangements for constructing, repairing, reconditioning, or taking-up road or like surfaces (apparatus for reconditioning of salvaged non-hydraulic compositions {for- in plant recycling of salvaged bituminous mixtures} [E01C 19/10](#))**

- 23/01 . . . Devices or auxiliary means for setting-out or checking the configuration of new surfacing, e.g. templates, screed {or reference line} supports (form rails [E01C 19/50](#)); Applications of apparatus for measuring, indicating, or recording the surface configuration of existing surfacing, e.g. profilographs ([E01C 23/07](#) takes precedence; measuring roughness or irregularity in general [G01B](#))
- 23/02 . . . Devices for making, treating or filling grooves or like channels in not-yet-hardened paving, e.g. for joints or markings (surface patterning [E01C 19/43](#)); Removable forms therefor (non-removable forms [E01C 11/02](#)); Devices for introducing inserts or removable insert-supports in not-yet-hardened paving ([E01C 23/04](#) takes precedence; non-removable {joint} insert supports [E01C 11/02](#))
- 23/021 . . . {Removable, e.g. reusable, forms for grooves or like channels ([E01C 23/028](#) takes precedence; groove-forming members of groove-making apparatus [E01C 23/025](#), [E01C 23/026](#)); Installing same prior to placing the paving (into laid paving [E01C 23/026](#))}
- 23/023 . . . {Removable joint-body supports ([E01C 23/045](#) take precedence); Installing joint or like bodies, e.g. waterstops, prior to placing the paving (into laid paving [E01C 23/026](#) takes precedence)}
- 23/025 . . . {Making or working grooves or like channels in laid paving, e.g. smoothing groove edges ([E01C 23/026](#), [E01C 23/028](#) take precedence)}
- 23/026 . . . {Introducing preformed inserts into or filling grooves or like channels in laid paving, with or without concurrent making or working of groove or channel, e.g. filling groove with semi-plastic material ([E01C 23/028](#) takes precedence)}
- 23/028 . . . {Positioning or producing markings, e.g. by forcing marking materials into the surface, by scoring}
- 23/03 . . . Arrangements for curing paving; Devices for applying curing means; Devices for laying prefabricated underlay, e.g. sheets, membranes (reinforcing elements [E01C 23/04](#)); Protecting paving under construction or while curing, e.g. use of tents (road barriers [E01F 13/00](#))
- 23/04 . . . Devices for laying {inserting or positioning} reinforcing elements or dowel bars {with or without joint bodies (installing or inserting joint bodies per se [E01C 23/023](#), [E01C 23/026](#))}; Removable supports for reinforcing {or load transfer} elements (non-removable supports therefor {[E01C 11/02](#)} [E01C 11/16](#); side forms adapted to supporting reinforcement [E01C 19/50](#)); Devices, e.g. removable forms, for making essentially horizontal ducts in paving, e.g. for prestressed reinforcements
- 23/045 . . . {Removable, e.g. reusable supports for positioning reinforcing or load transfer elements, adapted or not to also hold joint bodies}
- 23/05 . . . Devices for installing or removing forms
- 23/06 . . . Devices or arrangements for working the finished surface (working freshly laid paving [E01C 19/42](#) - [E01C 19/44](#), [E01C 23/02](#); mining picks [E21C 35/18](#)); Devices for repairing {or reconditioning} the surface of damaged paving; {Recycling in place or on the road}
- 23/065 . . . {Recycling in place or on the road, i.e. hot or cold reprocessing of paving *in situ* or on the traffic surface, with or without adding virgin material or lifting of salvaged material; Repairs or resurfacing involving at least partial reprocessing of the existing paving (*in situ* mixing of hydraulic cement concrete [E01C 19/025](#); apparatus for in-plant recycling [E01C 19/1004](#), [E01C 19/1036](#))}
- 23/07 . . . Apparatus combining measurement of the surface configuration of paving with application of material in proportion to the measured irregularities (measuring means only [E01C 23/01](#) ([G01B](#)))
- 23/08 . . . for roughening or patterning; for removing {the surface down to a predetermined depth} high spots or material bonded to the surface, e.g. markings; {for maintaining earth roads, clay courts or like surfaces by means of surface working tools, e.g. scarifiers, levelling blades} (removing matter not bonded to the surface [E01H 1/00](#); roughening or detaching ice [E01H 5/12](#))
- 23/081 {by thermal or cryogenic treatment, excluding heating to facilitate mechanical working}
- 23/082 using non-powered tools
- 23/0825 {rotary, e.g. gang discs}
- 23/085 using power-driven tools, e.g. vibratory tools
- 23/0855 {moved rectilinearly, e.g. scabblers}
- 23/088 Rotary tools, e.g. milling drums {(for forming recesses to receive marking materials [E01C 23/0946](#))}
- 23/0885 {with vertical or steeply inclined rotary axis}
- 23/09 . . . for forming cuts, grooves, or recesses, e.g. for making joints or channels for markings, for cutting-out sections to be removed; for cleaning, treating, or filling cuts, grooves, recesses, or fissures; for trimming paving edges
- 23/0906 {for forming, opening-out, cleaning, drying or heating cuts, grooves, recesses or, excluding forming, cracks, e.g. cleaning by sand-blasting or air-jet ([E01C 23/096](#), [E01C 23/0993](#) take precedence, save for [E01C 23/0946](#)); for trimming paving edges}
- 23/0913 {with non-powered tools, e.g. trailed router blade}
- 23/092 {rotary, e.g. edge trimmer disc}
- 23/0926 {with power-driven tools, e.g. vibrated, percussive cutters}
- 23/0933 {rotary, e.g. circular-saw joint cutters}
- 23/094 {about vertical or inclined axes, e.g. for core sampling ([E01C 23/0946](#) takes precedence)}
- 23/0946 {specially for forming recesses to receive marking materials or markers, e.g. cutters for milling traffic line channels, core drills for button-setting (other tools [E01C 23/0993](#))}
- 23/0953 {by thermal effect, e.g. cutting by melting, cleaning drying or heating with hot jets}
- 23/096 {for forming, opening-out, cleaning, drying or heating and filling ([E01C 23/0993](#) takes precedence)}

23/0966	. . . {for filling or priming, with or without working the surface of the filling or applying particulate material thereto, e.g. for filling the joints of stone-sett paving (E01C 23/096 , E01C 23/0993 take precedence)}	23/20	. . . for forming markings <u>in situ</u>
23/0973	. . . . {with liquid or semi-liquid materials, e.g. crack sealants}	23/203	. . . {the marking material being applied to the surface by contact with an application tool, e.g. paint roller}
23/098	. . . . {and working the surface of the filling or applying particulate material thereto, e.g. smoothing, gritting}	23/206	. . . {by applying fusible particulate material to the surface, e.g. by means of a gaseous stream}
23/0986	. . . . {with preformed elements, e.g. joint strips}	23/22	. . . by spraying (E01C 23/206 takes precedence)}
23/0993	. . . {for forming or installing surface markings or signals in the paving, e.g. grooving for striping or for producing rumble strips, forming marker-receiving recesses (E01C 23/0946 takes precedence)}	23/222	. . . . {specially adapted for automatic spraying of interrupted, individual or variable markings}
23/10	. . for raising or levelling sunken paving; for filling voids under paving; for introducing material into substructure (consolidating soil in general E02D 3/12)	23/225	. . . . {comprising means for mechanically working the applied material, e.g. smoothing brushes}
23/12	. . for taking-up, tearing-up, or {full-depth} breaking-up paving, {e.g. sett extractor}(adapted to both placing and removing {preformed} paving {elements} E01C 19/52)	23/227	. . . . {the marking material being supplied in aerosol containers}
23/121	. . . {with non-powered tools, e.g. rippers (rollers with ripping attachments E01C 19/264 , E01C 19/27 , E01C 19/285 ; roughening or patterning using non powered tools E01C 23/082)}	23/24	. . . by pouring
23/122	. . . {with power-driven tools, e.g. oscillated hammer apparatus (hand-held breakers: percussion tools B25D)}	23/243	. . . . {specially adapted for automatic pouring of interrupted, individual or variable markings}
23/124	. . . . {moved rectilinearly, e.g. road-breaker apparatus with reciprocating tools, with drop-hammers}	23/246	. . . . {comprising means for mechanically working the applied material, e.g. smoothing brushes}
23/125	. . . . {with direct-acting explosion chambers, i.e. Diesel breakers}		
23/127	. . . . {rotary, e.g. rotary hammers}		
23/128	. . . {with hydrojets (hydraulic cleaning E01H 1/101)}		
23/14	. for heating or drying foundation, paving, or materials thereon, e.g. paint (E01C 23/03 takes precedence; heating or drying devices incorporated in the paving E01C 11/26 ; surface {soil} stabilisation by fusing, calcining or burning soil <u>in situ</u> E01C 21/02 ; for street cleaning E01H 1/08 ; melting snow or ice on surfacing E01H 5/10)		
23/16	. Devices for marking-out, applying, or forming traffic or like markings on finished paving (E01C 23/14 takes precedence; inserting or forming in not-yet hardened paving E01C 23/02 , in recesses formed in fully-set paving E01C 23/09 ; marking-out playing courts or playgrounds A63C 19/06 ; applying liquids or other fluent materials to surfaces in general B05 ; road surface markings <u>per se</u> E01F 9/50); Protecting fresh markings		
23/163	. . {for marking-out the location of the markings; Guiding or steering devices for marking apparatus, e.g. sights}		
23/166	. . {Means for dispensing particulate material on to freshly applied markings or into the marking material after discharge thereof, e.g. reflective beads, grip-improving particles}		
23/18	. . for applying prefabricated markings		
23/185	. . . {Tape- or sheet-shape markers or carriers}		
		2201/00	Paving elements
		2201/02	. having fixed spacing features
		2201/04	. consisting of natural stones and a binder
		2201/06	. Sets of paving elements
		2201/065	. . specially for coverings around manhole-shafts or the like
		2201/08	. having direction indicating means
		2201/10	. having build-in shock absorbing devices
		2201/12	. vertically interlocking
		2201/14	. Puzzle-like connections
		2201/16	. Elements joined together
		2201/162	. . with breaking lines
		2201/165	. . with spots of glue
		2201/167	. . by reinforcement or mesh
		2201/18	. Elements representing text
		2201/20	. Drainage details
		2201/202	. . Horizontal drainage channels
		2201/205	. . . channels on the top
		2201/207	. . . channels on the bottom
		2301/00	Machine characteristics, parts or accessories not otherwise provided for
		2301/02	. Feeding devices for pavers
		2301/04	. . Independent shuttles
		2301/06	. . Windrow pickup
		2301/08	. . Pushing devices for lorries
		2301/10	. Heated screeds
		2301/14	. Extendable screeds
		2301/16	. . Laterally slidable screeds
		2301/18	. . . the whole machine being laterally slidable
		2301/20	. Screed or paver accessories for paving joint or edge treatment
		2301/30	. Cabin details
		2301/40	. Working platform or walkway
		2301/50	. Methods or devices for preventing dust by spraying or sucking