

## SECTION E — FIXED CONSTRUCTIONS

### 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 road or like surfaces by compacting or grading snow or ice E01H)

#### Subclass index

DESIGN; FOUNDATIONS.....	1/00, 3/00, 13/00
PAVING FOR ROADS, PLAYGROUNDS, OR THE LIKE	
Paving in general.....	5/00, 7/00
Special paving.....	9/00, 13/00, 15/00
Details.....	11/00, 17/00
CONSTRUCTION OR REPAIR OF ROADS, PLAYGROUNDS, OR THE LIKE.....	21/00, 19/00, 23/00

**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)

- 1/02 • Crossings, junctions, or interconnections between roads on the same level
- 1/04 • Road crossings on different levels; Interconnections between roads on different levels

#### Structure of roads, playgrounds, sports grounds, airfields

**3/00 Foundations for pavings** (specially adapted for playgrounds or sports grounds E01C 13/02; foundations in general E02D)

- 3/02 • Concrete base for bituminous paving
- 3/04 • Foundations produced by soil stabilisation
- 3/06 • Methods or arrangements for protecting foundations from destructive influences of moisture, frost or vibration

**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)

- 5/02 • made of natural stones, e.g. sett stones
- 5/04 • made of bricks
- 5/06 • made of units with cement or like binders
- 5/08 • • Reinforced units
- 5/10 • • • Prestressed reinforced units
- 5/12 • made of units with bituminous binders
- 5/14 • made of wooden units
- 5/16 • made of metallic units (steel gratings E01C 9/10)
- 5/18 • made of rubber units
- 5/20 • made of units of plastics (E01C 5/18 takes precedence)
- 5/22 • made of units composed of a mixture of materials covered by two or more of groups E01C 5/02-E01C 5/20

**7/00 Coherent pavings made in situ** (specially adapted for playgrounds or sports grounds E01C 13/06, for footpaths, sidewalks or cycle tracks E01C 15/00)

- 7/02 • made of road-metal without binders
- 7/04 • • of broken stones, gravel, or like materials
- 7/06 • • by melting, burning, or vitrifying road-metal in situ
- 7/08 • made of road-metal and binders
- 7/10 • • of road-metal and cement or like binders (cement or like binders, composition of mortars C04B)
- 7/12 • • • Mortar-bound paving
- 7/14 • • • Concrete paving
- 7/16 • • • • Prestressed concrete paving
- 7/18 • • of road-metal and bituminous binders
- 7/20 • • • Binder incorporated in cold state, e.g. natural asphalt
- 7/22 • • • Binder incorporated in hot state, e.g. heated bitumen
- 7/24 • • • Binder incorporated as an emulsion or solution (making dispersions or emulsions for road building C04B)
- 7/26 • • • mixed with other materials, e.g. cement, rubber, leather, fibre
- 7/30 • • of road-metal and other binders, e.g. synthetic material
- 7/32 • • of courses of different kind made in situ
- 7/34 • • • made of several courses which are not bound to each other
- 7/35 • • Topping or surface dressings; Methods of mixing, impregnating, or spreading them
- 7/36 • by subjecting soil to stabilisation

**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)

- 9/02 • Wheel tracks (rail tracks for guiding vehicles E01B 25/28)
- 9/04 • Pavings for railroad level-crossings
- 9/06 • Pavings adjacent tramways rails

## E01C

- 9/08 • Temporary pavings (steel gratings E01C 9/10)
- 9/10 • Steel gratings (gully gratings E03F 5/06; as building elements in general E04C)

### 11/00 Details of pavings

- 11/02 • Arrangement or construction of joints; Methods of making joints; Packing for joints (sealing joints not restricted to road or airfield paving E04B 1/68)
- 11/04 • • for cement concrete paving
- 11/06 • • • Methods of making joints
- 11/08 • • • Packing of metal
- 11/10 • • • Packing of plastic or elastic materials
- 11/12 • • • Packing of metal and plastic or elastic materials
- 11/14 • • • Dowel assembly
- 11/16 • Reinforcements (for building in general E04C)
- 11/18 • • for cement concrete pavings
- 11/20 • • • for prestressed concrete pavings
- 11/22 • Gutters; Kerbs (kerbs specially adapted for informing road users E01F 9/053)
- 11/24 • Methods or arrangements for preventing slipperiness or protecting against influences of the weather
- 11/26 • • Permanently-installed heating or blowing devices

### 13/00 Pavings or foundations specially adapted for playgrounds or sports grounds (general layout A63C 19/00)

- 13/02 • Foundations, e.g. with drainage or heating arrangements [6]
- 13/04 • Pavings made of prefabricated single units (E01C 13/08, E01C 13/10 take precedence) [6]
- 13/06 • Pavings made in situ (E01C 13/08, E01C 13/10 take precedence) [6]
- 13/08 • Surfaces simulating grass [6]
- 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) [6]
- 13/12 • • for snow sports [6]

### 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 9/04)

## Machines, tools or auxiliary devices for constructing or repairing the surfacing of roads or like structures

### 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)

- 19/02 • for preparing the materials
- 19/05 • • Crushing, pulverising, or disintegrating apparatus (in general B02C); Aggregate screening, cleaning, or heating apparatus
- 19/08 • • Apparatus for transporting and 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 precoating aggregate or fillers with non-hydraulic binders, e.g. with bitumen, with resins; Apparatus for premixing non-hydraulic mixtures prior to placing or for reconditioning salvaged non-hydraulic compositions
- 19/12 • for distributing granular or liquid materials (E01C 23/07 takes 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 19/52 takes precedence; distributing E01C 19/20)
- 19/16 • • for applying or spreading liquid materials, e.g. bitumen slurries (E01C 19/45, E01C 23/02, E01C 23/03, E01C 23/16 take precedence; spraying or spreading liquids or other fluent materials to surfaces in general B05)
- 19/17 • • • Application by spraying
- 19/18 • • Devices for distributing road-metals mixed with binders, e.g. cement, bitumen, without consolidating or ironing effect (E01C 19/20, E01C 19/47 take precedence; conveying installations for concrete or the like B65G)
- 19/20 • • Apparatus for distributing, e.g. spreading, granular or pulverulent materials, e.g. sand, gravel, salt, dry binders (fertiliser distributors A01C 15/00)
- 19/21 • • for simultaneously but separately applying liquid material and granular or pulverulent material, e.g. bitumen and grit, with or without spreading
- 19/22 • for consolidating or finishing laid-down unset materials (E01C 23/02 takes precedence; apparatus for generating vibrations in general B06B)
- 19/23 • • Rollers therefor; Such rollers usable also for compacting soil (E01C 19/43 takes precedence; specially adapted for agricultural purposes A01B 29/00; garden rollers A01G 1/12; making or maintaining surfaces of snow or ice E01H 4/00; solely for soil compaction E02D 3/026)
- 19/24 • • • hand propelled (E01C 19/27-E01C 19/29 take precedence)
- 19/25 • • • propelled by animals or vehicles (E01C 19/26-E01C 19/29 take precedence)
- 19/26 • • • self-propelled or fitted to road vehicles (E01C 19/27-E01C 19/29 take precedence)
- 19/27 • • • with elastically-deformable rolling elements, e.g. pneumatic tyres (vibrating or impacting E01C 19/28)
- 19/28 • • • Vibrated rollers or rollers subjected to impacts, e.g. hammering blows (E01C 19/29 takes precedence)
- 19/29 • • • Rolling apparatus adapted to apply a rolling pressure less than its weight, e.g. roller finishers travelling on formrails
- 19/30 • • Tamping or vibrating apparatus other than rollers (E01C 23/02, E01C 23/04 take precedence; vibrated depositing devices E01C 19/12; tamping or vibrating rollers E01C 19/28; portable percussion tools in general B25D; tamping or vibrating soil in general E02D 3/046)
- 19/32 • • • Hand-held hand-actuated rammers or tampers
- 19/34 • • • Power-driven rammers or tampers
- 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

- 19/40 • • • adapted to impart a smooth finish to the paving, e.g. tamping or vibrating finishers
- 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)
- 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, dampers, or vibrators, specially adapted for imparting a required surface finish to freshly-laid paving courses (E01C 19/43 takes 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 (E01C 19/45 takes precedence; making surfaces by mixing borrowed aggregate with binders E01C 21/00)
- 19/47 • • Hydraulic cement concrete mixers combined with distributing means specially adapted for road building (concrete mixers per se B28C)
- 19/48 • for laying-down the materials and consolidating them, or finishing the surface
- 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; slip forms E01C 19/48); Devices or arrangements for forming individual paving elements, e.g. kerbs, in situ
- 19/52 • Apparatus for laying individual preformed surface elements, e.g. kerbs (preforming and placing continuous strip E01C 19/46; forming paving elements in situ E01C 19/50)
- 21/00 Apparatus or processes for surface stabilisation for road building or like purposes, e.g. mixing borrowed aggregate with binder** (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
- 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 E01C 19/10)
- 23/01 • Devices or auxiliary means for setting-out or checking the configuration of new surfacing, e.g. templates, screed 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 insert supports E01C 11/02)
- 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 reinforcing elements or dowel bars; Removable supports for reinforcing elements (non-removable supports therefor 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 reinforcement
- 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 the surface of damaged paving [6]
- 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)
- 23/08 • • for roughening or patterning; for removing high spots or material bonded to the surface, e.g. markings (removing matter not bonded to the surface E01H 1/00; roughening or detaching ice E01H 5/12)
- 23/082 • • • using non-powered tools [6]
- 23/085 • • • using power-driven tools, e.g. vibratory tools [6]
- 23/088 • • • Rotary tools, e.g. milling drums [6]
- 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
- 23/10 • • for raising or levelling sunken paving; for filling voids under paving; for introducing material into substructure (consolidating soil in general E02D 3/12)
- 23/12 • • for taking-up, tearing-up, or breaking-up paving (adapted to both placing and removing paving E01C 19/52)
- 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 stabilisation by fusing, calcining, or burning soil in situ 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 per se E01F 9/04); Protecting fresh markings
- 23/18 • • for applying prefabricated markings [6]
- 23/20 • • for forming markings in situ [6]
- 23/22 • • • by spraying [6]
- 23/24 • • • by pouring [6]