G1 PRE-CAST CONCRETE PAVING FLAGS

Role, Use and Position

- Footway paving used on 'Public Highways' and within the curtilage of 'Private Developments'.
- Within developments and general amenity areas open for public access at grade.
- · All paved areas within underpasses and adjacent to blockwork parking areas.
- · Course to be laid perpendicular to flow of pedestrians.

Material/finish

- Conservation paving.
- Pre-Cast Concrete.
- · Textured Finish.
- · Clear antislip finish/coating on sloping paving

Colours

· Silver Grey.

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- · 'Stagger' bond.
- · Consistent joint alignments.
- · No unsightly mortar infills.

Dimensions

- 400 x 400mm x 65mm minimum.
- Where additional strength is required due to occasional vehicular loads, flags should be specified with the appropriate increased depth.

Additional Comments

 Footway surfacing has a significant impact on the streetscape. Design teams should ensure that the visual simplicity of the footway is maintained, this includes using tonal contrast tactile blister and hazard warning paving.

Note: All listed products shall be from approved suppliers. Alternative suppliers of products meeting the specifications listed above may be used following submission of alternatives for approval by the 'Engineer' to ensure full compliance with CMK Handbook requirements.



Example product



Example product

Available from

Marshalls plc, Birkby Grange, Birkby Hall Road, Birkby, Huddersfield HD2 2YA Tel: 0845 302 0600

Charcon Hulland Ward Ashbourne Derbyshire DE6 3ET Tel: 01335 372338

G2 BREEDON GRAVEL

Role, Use and Position

· Permeable surface treatment on Boulevard central reservations.

Material/finish

Breedon Gravel.

Colours

Buff.

Installation

Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".

Dimensions

• 10mm diameter, nominal.

Additional Comments

• To avoid root compaction, the installation of Breedon gravel around the base of trees should be appropriately detailed and approved.



Example product



Example product

Available from

Ennstone Breedon Ltd Breedon on the Hill Derby DE73 1AP Tel: 01332 862254

G3 CONCRETE SETTS

Role, Use and Position

• Blocks are used as a pedestrian surface at crossing points on central reservations to Gates and Boulevards.

Material/finish

- High quality exposed aggregate finish, La Linia by Marshalls would be an appropriate example.
- · Pre-cast concrete chamfered edge.



Grey granite.

Installation

- For edge restraints and installation refer to with Milton Keynes Council's "Specification for Highway & Construction works".
- · Staggered offset bond.

Dimensions

• 100 x 100 x 80mm.



Example product

Available from

Marshalls plc, Birkby Grange, Birkby Hall Road, Birkby, Huddersfield HD2 2YA Tel: 0845 302 0600

G4 AXOSTONE

Role, Use and Position

- Footways and cycleways in Campbell Park.
- · Footways along minor streets within the Ancient Portway.

Material/finish

· 'Cheviot Gravel' aggregate or Bituchem

Colours

Buff finish.

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- Mix reference L0933.02.
- Bed and backing concrete mix ST4.
- Edging: 50mm x 150mm precast concrete to BS7263 Fig. 4; or timber board 25mm x 125mm; to be agreed with the Council.

Dimensions

10mm diameter nominal, PSV55.



Example product - Bituchem



Example product - Bituchem

Available from

Lafarge Aggregates & Concrete UK Granite House, Watermead Business Park, Syston, Leicester LE7 1WA

Tel: 0844 561 0037 Fax: 0870 336 8602

Website: lafarge-aggregates.co.uk

G5 BLISTER PAVING

Role, Use and Position

(To comply with 'Guidance on the use of tactile paving surfaces' DETR 1998)

- Referred to as tactile paving.
- Blister paving is used to provide a warning to people with visual impairment of crossing facilities.

Material/finish

Pre-cast concrete.

Colours

- · Tonal contrast finish adjacent to silver grey footway paving.
- · Buff adjacent to self-binding gravel or resin bound gravel and axostone

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- Specification and application to conform to the current guidelines. Units must align with direction of crossing.
- Three rows shall be provided at crossing points laid to 1:10 falls.

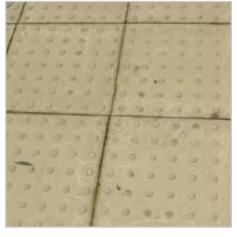
Dimensions

- 400 x 400 x 65mm.
- 4A blister height below4.5mm reduces effectiveness and becomes undetectable for the visual impared.

Additional Comments

 A balance has to be struck between the needs of people having visual impairments and other users and the character of CMK. There must however be sufficient tonal contrast between the footway paving and the blister paving to aid the visually impaired. A CMK variation is recommended with no tails back across the footway.

Note: All listed products shall be from approved suppliers. Alternative suppliers of products meeting the specifications listed above may be used following submission of alternatives for approval by the 'Engineer' to ensure full compliance with CMK Handbook requirements.



Example buff product



Example dark grey product

Available from

Marshalls plc, Birkby Grange, Birkby Hall Road, Birkby, Huddersfield HD2 2YA Tel: 0845 302 0600

Charcon Hulland Ward Ashbourne, Derbyshire DE6 3ET Tel: 01335 372338

G6 HAZARD WARNING PAVING

Role, Use and Position

(To comply with 'Guidance on the use of tactile paving surfaces' DETR 1998)

- Hazard warning paving can also be referred to as 'corduroy paving' as horizontal raised strips warn pedestrians of potential hazards.
- Provide a warning to people with visual impairment of cycleways, or changes of level including top and bottom of steps.
- Hazard warning\ paving may also be used to provide warning for other obstacles such as building overhangs or reduced overhead clearance heights.
- Must be positioned at right angles to direction of walking



Pre-cast concrete.

Colours

- · Tonal contrast finish adjacent to silver grey footway paving.
- · Buff adjacent to self-binding gravel or resin bound gravel and axostone

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- Specification and application to conform to the current guidelines. Units must align with direction of crossing.

Dimensions

• 400 x 400 x 65mm.





Example product



Example product

Available from

Marshalls plc, Birkby Grange, Birkby Hall Road, Birkby, Huddersfield HD2 2YA Tel: 0845 302 0600

Charcon Hulland ward Ashbourne, Derbyshire DE6 3ET Tel: 01335 372338

G7 INSPECTION COVERS

Role, Use and Position

- Service covers act as access points to either utility apparatus or drainage systems for maintenance. They are found in footways, carriageways and underpasses within 'Public Highways' and 'Private Developments'.
- Recess allows adjacent paving to be laid incover giving seamless paving within public realm.

Material/finish

Galvanised Steel.

Colours

- · Finished appearance to match adjacent surfacing.
- The use of a stainless steel 'marker' inset into the surface will denote utility.

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- Paving trays to be installed over the existing chamber to allow the new surface to be 'cut in' to match.
- · Trays to be laid parallel to direction of surrounding paving.
- · Paving to be laid in same direction as adjacent paving.

Additional Comments

 Tactile paving should be kept away or to a minimum near service covers, when possible.



Example product

Available from

Peter Savage Sales office: Liberty House, Liberty Business Park, Attleborough, Nuneaton, Warks, CV11 6RZ Tel: 02476 641 777

Steelway Brickhouse Tel: 01215 214 500 Fax: 01215 214 551

Website: www.steelway.co.uk

G11 KERBS AND CHANNELS

Role, Use and Position

· Throughout CMK unless specified otherwise.

Material/finish

· Natural granite to BS435 dressing B fair picked.

Colours

Silver grey.

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- Channels to be laid flush with minimum 150-300mm deep Class ST4 concrete bedding and haunching, to resist lateral movement.
- Kerb alignment to be consistent and follow smooth lines to provide strong definition between footway and carriageway.
- Upstand 100mm to kerbs.
- · Radius kerbs to be used, not straight cut.

Dimensions

300 x 200mm.



Available from

Marshalls plc, Birkby Grange, Birkby Hall Road, Birkby, Huddersfield HD2 2YA Tel: 0845 302 0600

Charcon Hulland ward Ashbourne Derbyshire DE6 3ET Tel: 01335 372338

G12 DRAINAGE CHANNELS

Role, Use and Position

 Drainage channels represent the junction between public and private footway.

Material/finish

- Bright steel/stainless steel grating.
- · Granite channel.

Colours

· Light to charcoal grey to match adjacent paving.

Installation

 Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".

Dimensions

· 200 x 100mm.



Example product

Available from

Marshalls plc, Birkby Grange, Birkby Hall Road, Birkby, Huddersfield HD2 2YA Tel: 0845 302 0600

G12A GULLEY FRAMES & COVERS

Role, Use and Position

- To aid drainage of carriageway primarily used in Boulevards, Gates (Type A) and in service roads with associated parking bays (Type B) in Central Milton Keynes.
- The Type A gully is positioned adjacent to the kerbline but within the channel.
- The Type B gully is normally located within the channel line demarcating the parking bay from the service road.
- · Exact position to be determined by design

Material/finish

· Both frame and cover of Type A and Type B are cast iron with natural finish

Colours

Natural metallic

Installation

 Installation in accordance with Milton Keynes Council's "Specification for Highway & Construction Works".

Dimensions

- Type A 450 x 450 x 100mm
- Type B 254 x 252 x 100mm



Example product: Type A



Example product: Type B

Available from

Type A -Manhole Covers Ltd, Little London Business Park, Wendover, Bucks. Tel: 01296 696 575

Peter Savage Ltd, Head Office, Nuneaton, Warks. Tel: 02476 641 777

Type B -Street Furniture Supplies Ltd, Signal House, Crown Way, Crown Park, Rushden. Tel: 08450 525 137

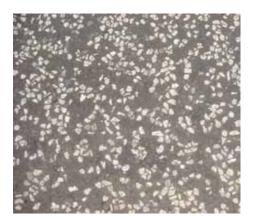
G13 HOT ROLLED ASPHALT

Role, Use and Position

- Carriageway surface finish used on all Boulevards, Gates and bellmouth interfaces within the designation of the 'Public Highway'.
- This type of surfacing is also suitable for access roads into private developments and loading areas.



Hot Rolled Asphalt Surfacing with Hansonlite pre-coated Chipping rolled in.
 The finished surface shall have a minimum texture depth of 1.2mm.



Example product

Colours

· Black matrix with white flecks.

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- Specification shall be the current Department for Transport Specification for Highway Works.
- All materials shall be manufactured and supplied in accordance with requirements of: BS594: Part1 2005 and Part 2: 2003.

Maintenance

Preferred method where repairs are to be carried out is to use infra-red heating
process techniques. This technique involves re-heating the existing surface
and recycling the material in situ with additional white chippings added if
required. This will ensure a seamless repair and eliminates any joint failures.

Dimensions

- 35-40mm Hot Rolled Asphalt.
- 20mm Pre-coated Chipping.

Additional Comments

 Milton Keynes Council promotes recycling and where possible Contractors should endeavour to re-use cold planed bituminous arisings.

Note: All listed products shall be from approved suppliers. Alternative suppliers of products meeting the specifications listed above may be used following submission of alternatives for approval by the 'Engineer' to ensure full compliance with CMK Handbook requirements.

Available from

Hot Rolled Asphalt Surfacing Contractor / material as agreed by Milton Keynes Council Highways Engineer.

Hansonlite pre-coated Chipping Hanson Aggregates, Shepshed Tel: 01509 503161

G14 CONCRETE BLOCK PAVING

Role, Use and Position

- Primarily used as the main surfacing on Streets, Cross Streets and Campbell Park, in addition a number of access roads into private developments are also block paved.
- Within the 'Public Highway' of CMK, all ramps to raised table crossing points, lay bys, taxi pick ups and parking bays are also block paved.

Material/finish

- · Pre-Cast Concrete Chamfered Edge.
- High quality exposed aggregate finish is required, La Linia by Marshalls or Andover in silver grey by Charcon would be appropriate examples.

Colours

Grey or silver grey.

Installation

- Streets, Cross Streets and access roads are laid in a herring bone pattern, with orientation and alignment to be determined by location.
- Campbell Park carriageways are laid in a herringbone bond perpendicular to kerb.
- Generally, all other block paving to be laid herringbone bond in rows perpendicular to the flow of traffic.
- For example, ramps to raised table crossing points, lay bys, taxi pick ups and parallel parking bays to be laid in herringbone bond perpendicular to kerb, with right angle parking bays to be laid herringbone bond parallel to the kerb.
- Exceptions to this include Streets and Cross Streets where there is a
 precedent for herringbone pattern in parking bays, in which case this
 precedent should be maintained.
- At pedestrian crossing points where the primary carriageway paving is herringbone block paving, herringbone bond paving to be laid in rows perpendicular to the kerb may be used, a tonal contrasting colour of silver grey for these crossing points should be used.
- Large areas of block work are partitioned with channel blocks perpendicular to the centre line of the carriageway.

Dimensions

• 200 x 100 x 80mm

Note: All listed products shall be from approved suppliers. Alternative suppliers of products meeting the specifications listed above may be used following submission of alternatives for approval by the 'Engineer' to ensure full compliance with CMK Handbook requirements.



Example product - Herringbone for streets



Example product - Stretcher bond on footpaths only

Available from

Marshalls plc, Birkby Grange, Birkby Hall Road, Birkby, Huddersfield HD2 2YA Tel: 0845 302 0600

Charcon Hulland Ward Ashbourne, Derbyshire DE6 3ET Tel: 01335 372338

G15 GRANITE SETTS

Role, Use and Position

 Used as a pedestrian deterrent surface on central reservation to Gates and Boulevards.

Material/finish

· Granite setts front face rough hewn.

Colours

Silver grey.

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- · Coursing to run perpendicular to kerb.
- · Stack bond required.

Dimensions

• 100x 100x 100mm.



Example product

Available from

CED Ltd,
728 London Road,
West Thurrock,
Grays,
Essex
RM20 3LU
Tel: 01708 867 237
Fax: 01708 867 230
sales@ced.ltd.uk

G16 MARKER BLOCKS

Role, Use and Position

 Marker blocks that contrast with surrounding paving and demarcate individual parking bays.

Material/finish

· Pre-cast concrete with white aggregate.

Colours

· White.

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- · Two blocks in soldier course to foot and head of each parking bay.

Dimensions

• 100 x 200 x 80mm diameter.

Additional Comments

 White cement or aggregate should be used to ensure markings do not wear off over time.



Example product

Available from

Marshalls plc, Birkby Grange, Birkby Hall Road, Birkby, Huddersfield HD2 2YA Tel: 0845 302 0600

G17 ROAD MARKINGS

Role, Use and Position

- Markings are applied to the carriageway to control, warn and guide the road user.
- Road markings do not confer a duty of care to individuals beyond the general public duty of the Highway Authority under Section 39 of the 1988 Road Traffic Act.

Material/finish

• Pre-formed thermoplastic strip or reflectorised finishes to paint should be

Example product

Colours

• Colours shall be as specified under the current Traffic Signs Regulations and General Direction [the Regulations] or relevant Guidance.

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- The standard width for all yellow lines shall be 50mm, except where
 prohibited by the Regulations. This is appropriate for design speeds of
 up to 30mph. Thicker lines can be used with permission where there are
 adhesion problems.
- The standard width for all other lines shall be the minimum specified in the Regulations.
- The usual size for all wording shall be the minimum specified in the Regulations.
- Markings shall be laid in sympathy with any underlying paving materials.
- Where markings are to be removed, 'ghost images' shall be avoided.
 Mechanical techniques such as sand-blasting are recommended to avoid damaging the road surface.
- Where markings are to be re-marked, the new paint shall be accurately applied over the old material.

Available from

G17 ROAD MARKINGS

Additional Comments

- Increasingly, coloured surfacing and road markings are being introduced.
 The use of colour is only advisory and their impact on the townscape should
 carefully be taken into consideration before any application. The townscape
 of CMK does not benefit visually from the addition of coloured surfacing/
 markings.
- If it is necessary to include coloured markings for parking, then the following is required:

Standard (purple) line marking RAL Number 4006
Premium (red) line marking RAL Number 3020
Line marking width 200mm
Line offset from granite channel kerb 0mm
A single size silica sand (hand applied between the two coats – to give a uniform rate of spread) which provides an anti-slip surface.

G18 ACCESS KERBS

Role, Use and Position

- Located at bus stops to facilitate level boarding for the public, particularly people with pushchairs and wheelchairs.
- Marker bump assists the bus to align parallel and close to the kerb.

Material/finish

Granite.

Colours

Silver grey.

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- Kerbs shall be laid with 150mm deep class ST4 concrete bedding and haunching.
- Kerb face 220mm for 3m boarding length with transition kerbs laid either side.



Example product

Available from

Charcon Hulland Ward Ashbourne Derbyshire DE6 3ET Tel: 01335 372338

G21 RAISED TABLES

Role, Use and Position

- The two main objectives of raised tables are to make crossing points universally accessible to ease pedestrian movements and to slow vehicle speeds.
- Side road entry treatments have another function to denote a change in character between a main street and a minor street.

Material/finish

- Ramps: concrete blocks laid to herring bone bond to match those used elsewhere (G14). Could be Stretcher bond if bonded down with Ronoset.
- · Table tops: hot rolled asphalt to match that used elsewhere
- · Kerbs: granite to match those used elsewhere.

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- The minimum gradient of approach ramps shall be 1:20.
- The minimum height of ramps shall be 75mm.
- The length of the raised area shall be sufficient to avoid grounding of vehicles, with a minimum length of 3m.
- Delineating kerbs shall be laid flush on the leading edges of the ramp, and flush with the top of the ramps.
- Any setts, blocks or kerbs shall usually be bedded in 200mm of concrete (Class ST4), with one layer of steel mesh reinforcement, as necessary.
- Drainage shall be moved or provided, as required in order to drain around a raised table.

Example product - Herring Bone



Example product - Stretcher bond

G22 LAY-BYS & TAXI PICK UP

Role, Use and Position

- · Lay-bys on Boulevards and Gates are parallel to the kerb.
- Lay-bys shall be suitable for use by deliveries, disabled drivers and other drivers.

Material/finish

• Pre cast concrete blocks as used elsewhere (G14).

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- Length: bay length 6m, max 3 bays.
- Width: 2.5m.
- Blocks laid to herringbone bond to match those laid elsewhere.
- Consideration to accessibility must be given to flushed curbs.
- Any blocks or kerbs shall usually be bedded in 200mm of concrete (Class ST4) with one layer of steel mesh reinforcement as necessary.
- · Drainage shall be moved or provided as necessary.
- Need 1.2m between trees and bollards.

Footpaths of 9.5 wide would allow a continuous line of trees to be planted behind the parking bays, thereby serving as a deterrent to parking on the pavement.

Detailed design to be determined in conjunction with the Council on an individual basis

Layby Detail

G23 PARKING BAYS

Role, Use and Position

- Parking bays can be parallel or perpendicular to the kerb.
- Parking bays shall be suitable to be used for deliveries of a small scale, disabled drivers and other drivers.

Material/finish

- Pre-cast concrete blocks laid to bond to match those used elsewhere (G14 and G16).
- Parking bays demarked with marker blocks (G16) or road markings (G17).

Installation

- Generally, all stagger bond paving to be laid in rows perpendicular to the flow of traffic.
- Parallel parking bays to be laid in stagger bond perpendicular to kerb.
- With right angle parking bays to be laid stagger bond parallel to the kerb.
- Streets and Cross Streets where there is a precedent for herringbone pattern in parking bays, this precedent should be maintained
- Any blocks or kerbs shall usually be bedded in 200mm of concrete (Class ST40) with one layer of steel mesh reinforcement as necessary.
- Drainage shall be moved or provided as necessary.



Example parallel parking bay



Example perpendicular parking bay

G24 STEPS AND RAMPS

STEPS

Role, Use and Position

- Steps are used where there are changes in level over a relatively short distance.
- Changes in level over 150mm should have a step with all the requisite landings, handrails and hazard warning paving (G6).

Material/finish

- · Pre-cast concrete risers and treads with anti-slip inserts.
- · Reinforced in-situ concrete bases.

Installation

- Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".
- · To MKC guidelines and Building Regulations 2000 Part M.
- Rise between 150-170mm.
- Tread between 300-450mm.
- · Minimum width 1200mm.

RAMPS

Role, Use and Position

- Ramps are beneficial to wheelchair user, people pushing prams, pushchairs and bicycles
- As a general guide, ramps should be provided where practicable adjacent to stepped access.

Material/finish

Pre-cast concrete slabs as G1.

Installation

- To MKC guidelines and Building Regulations 2000 Part M.
- · Gradients to be as shallow as possible. See table opposite.
- Wheelchair users need adequate space to stop on landings, to open and pass through doors without having to reverse into circulation routes or to face the risk of rolling back down slopes. Landings should be at least 1.5m long.

Note: All listed products shall be from approved suppliers. Alternative suppliers of products meeting the specifications listed above may be used following submission of alternatives for approval by the 'Engineer' to ensure full compliance with CMK Handbook requirements.



Example product

Going of a flight	Maximum gradients	Maximum rise
10m	1:20	500mm
5m	1:15	333mm
2m	1:12	166mm

Limits for Ramp Gradients

Available from

Marshalls plc, Birkby Grange, Birkby Hall Road, Birkby, Huddersfield HD2 2YA Tel: 0845 302 0600

Charcon, Hulland Ward, Ashbourne, Derbyshire DE6 3ET Tel: 01335 372338

G25 TREE SURROUND

Role, Use and Position

- Improvement on the existing quadrant cut-out type.
- Promoting maximum usable footpath whilst reducing the potential for trip hazards.
- Promoting rainwater access to the tree roots.
- A robust element to reduce future maintenance liabilities.
- Tree planting positions to co-ordinate and integrate with the paving modules and patterns at 4.8m centres to accord with paving modules.
- Refer to MKC Technical Guidance 4 Street Trees in Central Milton Keynes: Guidance on the Development process.

Material/finish

· Fabricated galvanised steel support with paving block infills.

Colours

To match adjacent paving.

Installation

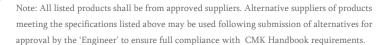
• Installation to be in accordance with Milton Keynes Council's "Specification for Highway & Construction works".

Maintenance

To manufacturers recommendations.

Dimensions

- 1200 x 1200mm.
- Bespoke dimensions for special circumstances.





Example product



Example product

Available from

Jones of Oswestry Ltd Whittington Road, Oswestry, Shropshire SY11 1HZ Tel: 01691 653251 Fax: 01691 658222 Website: www.jonesofoswestry.co.uk

Marshalls plc, Birkby Grange, Birkby Hall Road, Birkby, Huddersfield HD2 2YA Tel: 0845 302 0600