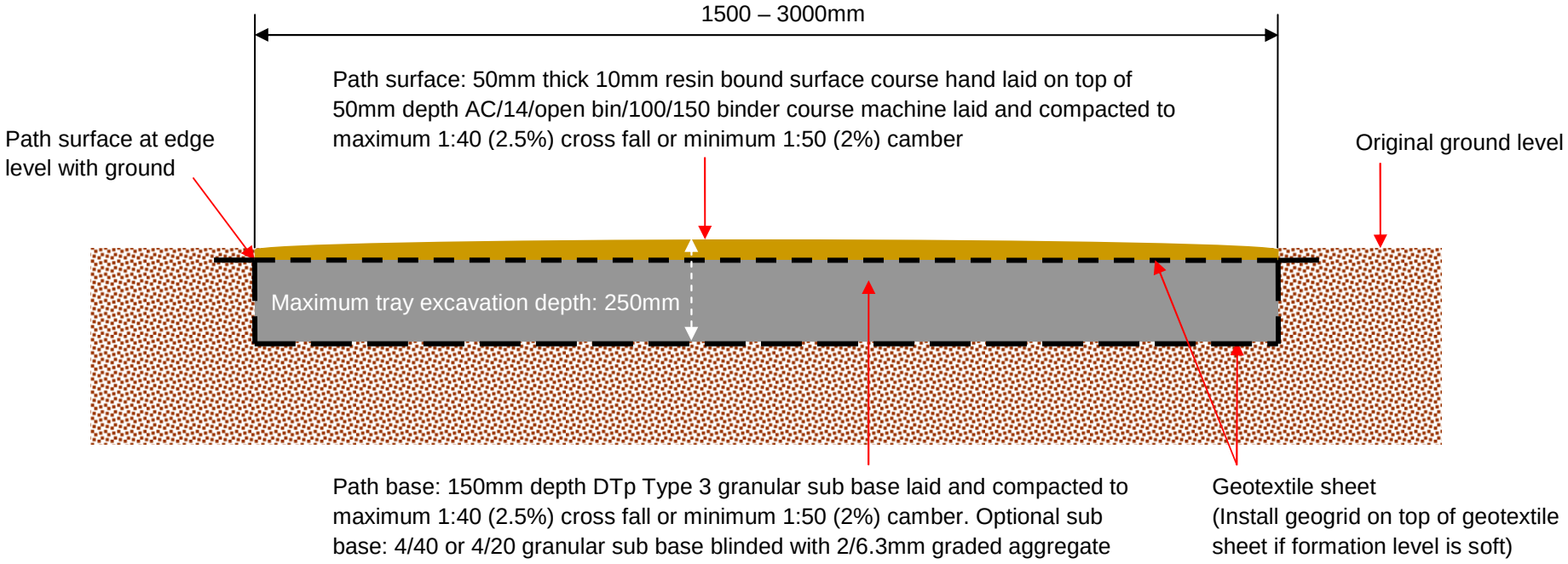
Construction notes:

1. Stripped turfs and excavated soil to be cast and spread locally on site.
2. Formation level to be treated with approved residual herbicide.
3. Soft spots to be excavated and filled with DTp Type 3 granular sub base.
4. Base and surface courses to be laid to maximum 1:40 (2.5%) cross fall or minimum 1:50 (2%) camber and compacted to refusal using heavy vibrating roller (minimum 120 type roller recommended).
5. Surface regularity - maximum 10mm gap under 3.0 metre straight edge placed along the sub base surface and maximum 5mm gap for binder/ surface courses.
6. This drawing should be read in conjunction with specification details SPEC/BGP/01. Bitmac mixture to be produced according to BS EN 13108-1 Bituminous Mixtures – Material Specifications Part 1: Asphalt Concrete. AC/14/open bin/100/150 is asphalt concrete with 14mm maximum aggregate size for an open binder course with 100/150 penetration grade bitumen. Granular sub base to be produced according to SHW clause 805 or BS EN 12620: Aggregates for Concrete.



paths for all

Bound Gravel Path (Full Tray Excavation) Standard Detail

Date: 08/06/11
Scale: Not to scale
Drawn by: Technical Officer
Drawing nr: SD/BGP/01

SPECIFICATION DETAILS – SPEC/BGP/01

Bound Gravel Path

Note: These specification details should be read in conjunction with standard detail drawing SD/BGP/01 – Bound Gravel Path (Full Tray Excavation).

Material Specification Details

Sub base layer	Open DTp Type 3 granular sub base Optional sub base: 4/40 or 4/20 granular sub base blinded with 2/6.3 graded aggregate
Binder course layer	50mm open bitumen macadam (AC/14/open bin/100/150)
Surface course layer	Proprietary resin bound gravel (SureSet / Addaset) with 10mm single size angular gravel. Silica sand.
Geotextile (If required)	Autoway 120 or alternative equivalent product grade (Terram 2000, Lotrak 16/15)
Geogrid (If required)	Auto Grid

Construction Specification Details

Formation tray excavation

- Excavate the ground to expose sub soil and grade out irregularities to form 1.5metre wide formation tray to maximum depth of 250mm below ground levels.
- Formation tray should be rectangular in section with vertical sides and level base. Treat formation level with approved residual herbicide.
- Stripped vegetation and excavated topsoil to be cast and spread locally on site, either side of formation tray and landscaped into existing ground levels. If space is limited cart excess materials to suitable location on site for spreading and landscaping.
- If soft spots are present, excavate the area below formation level until the sub grade is stable. Back fill with DTp Type 3 granular sub base to formation level and compact to refusal.

Geotextile sheet installation (including geogrid if required)

- Lay and secure geotextile sheet in formation tray. Geotextile sheet should line the base and both sides. Overlap joining sheets by 1.0metre.
- Lay and secure geogrid on top of geotextile sheet. Geogrid should not protrude up the sides of the formation tray. Overlap joining sheets by 1.0metre.

Sub base layer

- Using a drag box lay 150mm depth of DTp Type 3 granular sub base upon the geotextile sheet in the formation tray to falls and levels, to form 1:50 (2%) camber or 1:40 (2.5%) crossfall. If no drag box is available, DTp Type 3 granular sub base should be laid, spread and raked to falls and levels using asphalt rake.

- Compact sub base layer thoroughly to refusal using a heavy ride-on tandem vibrating roller until full compaction is achieved (minimum 120 type roller recommended).
- Once sub base layer is compacted, check levels of the surface at regular intervals along the compacted sub base layer for consistent even surface regularity, which should be accurate to maximum gap of 10mm under a 3.0metere long straight edge, with no high or low points or hollows.
- Any part of the sub base layer deviating from the required level must be raked off or topped up with additional DTp Type 3 granular sub base and re-compacted to the correct levels.

Geotextile sheet installation

- Lay and secure geotextile sheet on top of compacted sub base layer. Overlap joining sheets by 1.0metre.

Binder course layer

- Using mini paving machine lay 50mm depth of open bitumen macadam upon the geotextile sheet on the compacted sub base layer to falls and levels, to form 1:50 (2%) camber or 1:40 (2.5%) crossfall.
- Compact binder course layer thoroughly to refusal using a heavy ride-on tandem vibrating roller and continue rolling non-stop until there is no roller marks in the finished surface (minimum 120 type roller recommended to ensure adequate compaction).
- Once rolling is finished, check levels of the surface at regular intervals along the compacted binder course layer for consistent even surface regularity, which should be accurate to maximum gap of 5mm under a 3.0metere long straight edge, with no high or low points or hollows.
- Any part of the binder course layer deviating from the required level must be regulated with additional open bitumen macadam and re-compacted to the correct levels. Alternatively, the binder course layer can be regulated with resin bound surfacing before final resin bound surface course is laid.

Temporary timber edging installation

- Either side of the compacted binder course layer install temporary timber edging to height of 50mm above the surface level along the edges of the binder course layer, ready for laying 50mm depth of resin bound gravel surfacing.

Surface course layer – mixing the resin bound gravel

- In accordance with manufacturers mixing instructions carefully add the required amount of hardener and resins together before mixing to make the first resin bound gravel batch.
- Using a high speed mixing paddle attached to power drill powdered by a petrol generator, thoroughly mix the hardener and resins together to ensure full distribution of the hardener through the resins so that the curing time is equalised when the resins mixture and 10mm single size angular gravel are added together for mixing.
- Using a mobile diesel engine pan mixer (recommended make: Imer), add the required quantity of 10mm single size angular gravel to the pan mixer to make the first resin bound gravel batch, start agitating the gravel whilst adding the resins mixture in accordance with manufacturers mixing instructions.

- The gravel and resins mixture should be mixed together for approximately 2 minutes to ensure the resin is evenly distributed and the gravel is fully coated with resin.
- Once mixing is completed, discharge the resin bound gravel into polythene lined wheel barrows or power barrows for transporting to the prepared binder course for laying.
- Complete the above mixing process for remaining resin bound gravel batches.

Surface course layer – laying the resin bound gravel

- Tip the resin bound gravel upon the prepared binder course layer between the raised temporary timber edgings and distribute by shovel over the surface area.
- Using the temporary timber edgings as a level, with hand-held lutes work the resin bound gravel backwards and forwards, side to side over the binder course layer to evenly spread the material to falls and levels, to form a uniform level 50mm thick surface course layer with 1:50 (2%) camber or 1:40 (2.5%) crossfall.
- Using hand-held bull float trowels work the resin bound gravel over the newly laid surface course layer to create a smooth, even, tightly knitted level surface; and to fill in any minor hollows or remove any minor bumps missed by the lute. Also, use the trowel to move the material tightly up against the temporary timber edgings.
- Once each batch of resin bound gravel have been laid, check levels of the surface at regular intervals along the troweled surface course layer for consistent even surface regularity, which should be accurate to maximum gap of 5mm under a 3.0metere long straight edge, with no high or low points or hollows.
- Any part of the surface course layer deviating from the required level must be regulated with additional resin bound gravel and re-troweled to the correct levels.
- Lightly sprinkle clean silica sand over the new surface course layer to remove any tackiness and to provide some traction.
- Once surface course layer has dried carefully remove the temporary timber edging from the path edges.

Landscaping

- Exposed geotextile sheet edges either side of path should be covered over with a 150mm depth of topsoil. The topsoil should be landscaped level with finished path surface.
- The finished path surface should be level with the ground on either side of path to allow surface water to run off onto adjacent ground.