Design Assessment Checklists for Permeable/Porous Pavement

**Table 1 Deemed to Comply Requirements: Permeable/Porous Pavements**

|  |  |
| --- | --- |
| **Parameter** | **Deemed to comply requirements** |
| Depth of sub-base | Designed in accordance with BS7533-13 or TRL Report PPR 482 |
| Sub-base specification | Meets requirements of BS7533-13 |
| Longitudinal slope on surface | Slope < 1 in 20 |
| Laying course (for block paving) | Meets requirements of BS 7533-13 |
| Surface layer permeability | > 5000mm/h |
| Flow control | Provided to meet hydraulic control requirements of design |
| Maximum water depth for design event | Top of sub-base |

**Table 2 Design Assessment Checklist: Permeable/Porous Pavement**

|  |  |
| --- | --- |
| **GENERAL INFORMATION** |  |
| Site ID |  |
| Asset ID(s)  |  |
| Pavement Location(s) and co-ordinates |  | Drawing Reference(s) |  |
| Date of assessment |  | Specification Reference(s) |  |
| Primary function of pavement | Attenuation / Infiltration / Water Quality |

| **Check** | **DtCR**  | **Summary details** (*See Note)* | **Acceptable (Y/N)** | **Comments/ Remedial actions** |
| --- | --- | --- | --- | --- |
| **SURFACING (SuDS Manual Ref.)** |  |  |  |  |
| Type of surfacing (block paving, porous asphalt or plastic reinforced gravel/grass) |  |  |  |  |
| Confirm surfacing is suitable for the location and will withstand likely forces (e.g. turning forces from HGVs). |  |  |  |  |
| Confirm all shallow services are located within service corridors beneath impermeable surface, as far as possible |  |  |  |  |
| Permeability of surface layer | **** |  |  |  |
| Specified joint infill or grid infill |  |  |  |  |
| Specified binder for porous asphalt (to ensure maximum adhesion to aggregate) |  |  |  |  |
| Specified filler for porous asphalt (to ensure maximum adhesion to aggregate) |  |  |  |  |
| **DIMENSIONS (SuDS Manual Ref.)** |  |  |  |  |
| Length (m) |  |  |  |  |
| Width (m) |  |  |  |  |
| Depth of capping layer (m) |  |  |  |  |
| Depth of sub-base (m) | **** |  |  |  |
| Depth of laying course or regulating layer (m) | **** |  |  |  |
| Maximum longitudinal or cross gradient (1 in ?) | **** |  |  |  |
| Distance between check dams in sub-base (if provided) (m) |  |  |  |  |
| **INFLOWS (SuDS Manual Ref.)** |  |  |  |  |
| Provide a description of the contributing catchment land use (i.e. overlying surface only or additional inflows) and its size (m2). |  |  |  |  |
| Where the pavement accepts point source inflows, does the design include suitable energy diffusers? |  |  |  |  |
| **OUTFALL ARRANGEMENTS (SuDS Manual Ref.)** |  |  |  |  |
| Is the pavement designed to allow infiltration into the subgrade? If yes, attach Infiltration Assessment. |  |  |  |  |
| Provide details of any flow control systems, overflow arrangements and limiting discharge rate from pavement. | **** |  |  |  |
| Is a geomembrane required to prevent infiltration or protect foundations? If yes, give reason. |  |  |  |  |
| Depth to maximum likely groundwater level (m) |  |  |  |  |
| **ATTENUATION (SuDS Manual Ref.)** |  |  |  |  |
| Confirm voids ratio of sub-base material. |  |  |  |  |
| Demonstrate collection pipework is of sufficient capacity? |  |  |  |  |
| Demonstrate that if the sub-base is used to convey water, the flow capacity will be sufficient? |  |  |  |  |
| Provide calculations for maximum water depth and return period for the design event. | **** |  |  |  |
| Check dams required because of sloping subgrade? If yes, provide details. |  |  |  |  |
| **STRUCTURAL PAVEMENT DESIGN (SuDS Manual Ref.)** |  |  |  |  |
| CBR\* used in design and confirm it is appropriate to the soils below the site when wetted. |  |  |  |  |
| Assumed traffic loads used in design. |  |  |  |  |
| Design method used for structural design and provide calculations |  |  |  |  |
| **LANDSCAPE (SuDS Manual Ref.)** |  |  |  |  |
| Is the proposed planting adjacent to the pavement appropriate to the location? |  |  |  |  |
| Is pavement protected from silt wash off from adjacent planting areas? |  |  |  |  |
| **CRITICAL MATERIALS/ PRODUCT SPECIFICATIONS** |  |  |  |  |
| Geomembrane |  |  |  |  |
| Geotextile (non-woven) |  |  |  |  |
| Geogrids |  |  |  |  |
| Blocks/asphalt/plastic grids |  |  |  |  |
| Block jointing or grid infill material |  |  |  |  |
| Laying course | **** |  |  |  |
| Base course (Note: where this is to be used as a temporary running course during construction, demonstrate that the puncture frequency is sufficient to support the design hydraulic performance of the system)  | **** |  |  |  |
| Sub-base | **** |  |  |  |
| Capping layer |  |  |  |  |
| Topsoil |  |  |  |  |
| Other (including proprietary systems) |  |  |  |  |
| **CONSTRUCTABILITY (SuDS Manual Ref.)** |  |  |  |  |
| Are there any identifiable construction risks? If yes, state and confirm acceptable risk management measures are proposed. (Note key requirement to protect permeable surface during construction.) |  |  |  |  |
| **MAINTAINABILITY (SuDS Manual Ref.)** |  |  |  |  |
| Confirm that access for maintenance is acceptable and summarise details. |  |  |  |  |
| Are there specific features that are likely to pose maintenance difficulties? If yes, identify mitigation measures required. |  |  |  |  |
| **PAVEMENT DESIGN ACCEPTABILITY (SuDS Manual Ref.)** | **Summary details including any changes required** | **Acceptable (Y/N)** | **Date changes made** |
| Acceptable:Minor changes required: Major changes required / re-design: |  |  |  |

Note: Input range if applied to > 1 pavement. If there is a DtCR (as indicated) confirm whether or not this is met and provide details of any variations.

\*CBR = California Bearing Ratio. This is a penetration test for evaluation of the mechanical strength of subgrades and basecourses.