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The Highways Agency (HA) requires that all structures erected within the highway boundary, on HA land or where they may fall onto HA land, have been designed by competent persons and are safe.

This procedure is called Technical Approval and is set out in the HA document entitled Technical Approval of Highway Structures, BD 2, which is part of the HA Design Manual for Roads and Bridges. (The HA does not require any involvement if the mast is not on HA land and if the telecom mast is located beyond the ‘fall distance’ of HA land).

There are two methods to gain technical approval:
- Generic Registration Technical Approval covers the design of a mast for a range of parameters that would allow it to be used at a number of locations;
- Site Specific Technical Approval covers individual structures.

This procedure covers Generic Registration Technical Approval, but for Site Specific Technical Approval reference should be made to BD 2.

In order to obtain approval to erect a telecom mast on HA land, the Telecom Company shall apply to the HA to register the mast, in accordance with the Telecom Mast Registration Procedure. This procedure requires the Telecom Company to demonstrate that a competent person or persons have designed the mast, checked that it complies with the required design standards and is appropriate for the selected location.

The provision of a manufacturer’s data sheet is not sufficient to comply with this Telecom Mast Registration Procedure because it does not normally confirm that the mast selected is appropriate (safe) for the proposed location.

The following definitions shall apply throughout this procedure.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checker</td>
<td>An individual or group of engineers responsible for checking the design. It may comprise an appropriate mix of specialists under the direction of a Team Leader.</td>
</tr>
<tr>
<td>Competent Person</td>
<td>The person responsible for overseeing and co-ordinating the work of the design, or checking team and having authority to sign on behalf of the team. The Competent Person shall be appropriately qualified and competent in relevant fields of engineering related to the work and is expected to be a Chartered Member of a relevant Institution or suitable equivalent.</td>
</tr>
<tr>
<td>Compliance Certificate</td>
<td>A signed statement by the Telecom Company that the mast is suitable for use at a specific location.</td>
</tr>
<tr>
<td>Construction Stage Approval</td>
<td>Approval given by the local Maintaining Agent to proceed with construction and erection of the telecom mast.</td>
</tr>
<tr>
<td>Data Sheet</td>
<td>A sheet listing all of the design parameters and basic structural information that has been used for the design of the telecom mast or mast system.</td>
</tr>
<tr>
<td>Designer</td>
<td>An individual, group or organisation of engineers responsible for the design. It may comprise an appropriate mix of specialists under the direction of a Team Leader.</td>
</tr>
<tr>
<td>Fall Distance</td>
<td>The distance equal to the proposed total height of the structure (including equipment/antennae) above ground level, when laid horizontally on the ground.</td>
</tr>
<tr>
<td>Generic Registration</td>
<td>The Technical Approval for a mast system to be used throughout England wherever the generic design parameters are not exceeded. HA agreement is required to confirm that the information submitted for a particular structure meets the generic design parameters submitted. Approval shall be registered with the HA.</td>
</tr>
<tr>
<td>Technical Approval</td>
<td></td>
</tr>
<tr>
<td>Highway Structure</td>
<td>Structure or installation coming within the scope of this Procedure and situated under, over or adjacent to a motorway, trunk road or designated road.</td>
</tr>
<tr>
<td>Lighting Column System</td>
<td>Range of combinations of column heights and lengths of brackets together with the weights and windage areas of lanterns and attachments for which the column has been designed.</td>
</tr>
<tr>
<td>Maintaining Agent (MA)</td>
<td>The organisation responsible for the maintenance of a Highway Structure.</td>
</tr>
<tr>
<td>Overseeing Organisation</td>
<td>The highway authority responsible for motorways and other trunk roads or designated roads in England, Scotland, Wales and Northern Ireland.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Proprietary Manufactured</strong></td>
<td>A structure manufactured to a system covered by a patent and/or a registered design that conforms to a Technical Approval procedure and TAS (see below for definition of TAS).</td>
</tr>
<tr>
<td><strong>Structure</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Statement of Registration</strong></td>
<td>A certificate issued by the HA representative recording the registration details of the Telecom Company, the mast system and a named contact.</td>
</tr>
<tr>
<td><strong>Team Leader</strong></td>
<td>The person responsible for overseeing and co-ordinating the work of the design and/or checking team and having authority to sign on behalf of the team. The Team Leader shall be appropriately qualified and competent in relevant fields of engineering related to the work and is expected to be a Chartered Member of a relevant Institution or suitable equivalent.</td>
</tr>
<tr>
<td><strong>Telecom Company</strong></td>
<td>The owner of the mast system who is guaranteeing and taking responsibility for the validity of the information supplied to the HA representative for registering the mast in accordance with the Mast Registration Procedure.</td>
</tr>
<tr>
<td><strong>Telecom Mast or Mast System</strong></td>
<td>A monopole or monopole system made from steel or composite materials used to support antennae or other telecommunications equipment and owned by a Telecom Company.</td>
</tr>
<tr>
<td><strong>Technical Approval (TA)</strong></td>
<td>The submission of Proposals for agreement by the HA representative and the subsequent provision of a Statement of Registration by the HA.</td>
</tr>
<tr>
<td><strong>Technical Approval Schedule</strong></td>
<td>The schedule of documents to be used for the design or assessment of a Highway Structure.</td>
</tr>
<tr>
<td><strong>(TAS)</strong></td>
<td></td>
</tr>
</tbody>
</table>
Technical Approval (TA) is the Overseeing Organisation’s means of managing technical requirements for new and existing structures (both permanent and temporary) to ensure that designs are safe and fit for their intended purpose.

In the case of Third Party structures (telecom masts are in this category of structures) this appraisal will also extend to assessing the effect on HA structures and on the road network.

The fundamental objectives of the TA procedures are to ensure, as far as reasonably practicable, that Highway Structures are safe and serviceable in use, economic to build and maintain, sustainable and with minimal impact on the environment, and satisfactorily perform their intended functions.

The TA procedures also ensure, as far as reasonably practicable, that the highway user and any others who may be affected are protected from any adverse effects resulting from any work carried out to any Highway Structure and that there is adequate provision for safety under all circumstances.

TA provides procedures to safeguard the HA’s and their Maintaining Agents’ responsibilities, through their authority to technically approve schemes, in protecting the Secretary of State’s (in Northern Ireland, the Department for Regional Development’s; in Scotland, the Scottish Ministers’ and in Wales, the Welsh Ministers’) interests and statutory duties of public safety.

TA applies to proposals, including private development, within the highway boundary. It also applies to Proposals, which are outside the highway boundary, for adoption of Highway Structures by the HA and/or their Maintaining Agents. It is recommended that TA be applied to Proposals outside the highway boundary resulting from planning applications that are referred to the HA and/or their Maintaining Agents for direction, as they may affect the highway. (These considerations will not consider the economic considerations of building, maintaining and sustainability of Third Party structures).

Where the Overseeing Organisation is consulted during planning applications, this type approval will be required. Where the masts are outside highways authority land, this ‘type approval’ is usually all that would be required (provided that the construction did not require any access/interfere with road users). In many cases local authorities will give conditional approval subject to obtaining this ‘type approval’.

TA does not apply to cases where there are no public safety issues such as temporary works in green field sites or only in place during full road closures.
with no other public access. However, TA applies to temporary works where the permanent works proposal has identified the need for an independent check.

There are two types of Technical Approval available for Telecom Mast Registration,

   Option 1:  Generic Registration Technical Approval, and
   Option 2:  Site Specific Technical Approval,

details of both are described below and are shown on the attached Table 1.

2.1  **Option 1: Generic Registration Technical Approval**

In order to avoid Telecom Companies having to submit full technical approval for each individual site to the HA, they have agreed, in consultation with Telecom Companies, to a Generic Registration Technical Approval. In summary, the designer shall certify that the mast has been designed/checked for a range of generic design parameters that will allow the proposed mast system to be used throughout England wherever those parameters are not exceeded. For each mast system, this will only have to be done once.

For each proposed new site the Telecom company shall provide copies of the mast system registration documents to the HA and thereby negating the need for any further checks on the structural adequacy of the mast. General arrangements and site details are not required for this technical approval (they form part of the Construction Stage Approval).

The status of the Mast Registration of a particular mast system application can be confirmed by contacting the Asset Management & Performance Group, Safety Standards and Research (AMP SSR). It can also be confirmed by e-mail: telecom.masts@highways.gsi.gov.uk
2.2 **Option 2: Site Specific Technical Approval**

Site Specific Technical Approval is to be used for individual structures that are designed for use in only one location, for example, a mast at high altitude or subject to high wind speeds, a lattice tower or other unique structure.

The Telecom Company shall submit full details of the telecom mast, and confirmation that the design has been carried out to the appropriate design standards by competent named individuals with appropriate qualifications and experience in accordance with BD2, Technical Approval of Highway Structures. This will require the submission of an Approval in Principle (AIP) document; an appropriate model document is given in BD2: Annex A1.

The Approval in Principle (AIP) should provide all the relevant design parameters and end user requirements for the structure. For example, it should include appropriate statements regarding appearance, environmental and maintenance considerations. Drawings should be provided including a location plan together with any other relevant details of any possible effect on the highway network and/or anything else that may affect the HA/Maintaining Agent.

The following is a check list of essential requirements for an AIP; for full details, refer to BD2:

1. Location
2. Operational dimensions/levels
3. Highway loading requirements
4. Other loading requirements
5. Relevant Departmental Standards, British Standards, Codes of Practice etc.
6. General Arrangement drawing including the Designated Outline

The following is a check list of other requirements for an AIP; for full details, refer to BD2:

7. Ground investigation data
8. Appearance of structure
9. Environmental factors
10. Constraints/external control during construction
11. Operational or user requirements
12. Special maintenance
13. Any other essential requirements

The HA will deal with each individual request on a 'local basis'. The contact details of the local representative in England can be obtained by e-mailing the HA Asset Assurance Group (AAG SSR) on: technical.approval@highways.gsi.gov.uk
Mast registration procedure

The Telecom Company is required to compile details of the proposed generic mast system or of the site specific telecom mast and submit these to the Highways Agency. Standard pro-formas are included in Appendices A1 to A4, and if required, electronic copies of these forms can be obtained from AMP SSR.

The purpose of these forms is to describe the typical information required when submitting a request to the HA. To assist the HA it is useful to replicate the format of these forms and provided the required information is included.

There is no reason why these forms cannot be tailored to suit individual company requirements. This may include adding company names, logos, and extending tables to include variants in mast height, etc. If these alterations result in two pages being created for a particular certificate then it is important that particular mast reference details, for example, mast name, drawing number, manufacturer’s reference number, revisions etc. are all included on both sheets. All sheets must be signed on behalf of the Telecom Company. A description of the forms is given below and the procedure is shown on the attached Table 1:

3.1 Statement of Registration
A Certificate issued by the HA recording registration details of the Telecom Company, the mast system and a named contact is required. The registration is in the name of the Telecom Company (not the manufacturer/designer). It is the Telecom Company, which is guaranteeing and taking responsibility for the validity of the information supplied. A sample Statement of Registration is included in Appendix A1 for information.

3.2 Design Check Certificate
A Form completed by the designer and the checker to confirm that they have exercised due professional skill and care in undertaking the design of the telecom mast system. A sample Design Check Certificate is included in Appendix A2 for information. Separate design check certificates may be submitted for the telecom mast’s structure and its foundation.

The Checker should be a senior member of the design organisation, and for structures above 20 metres in height, the checker shall be independent of the design team.
3.3 Data Sheet

A Sheet listing all of the design parameters and basic structural information that has been used for the design of the telecom mast. A blank sample Data Sheet is included in Appendix A3 and an example of a completed Data Sheet is included in Appendix A6 for information. It should be noted that the sample data sheet is in two parts to allow separate approval of the mast's structure and its foundation, if required.

The basic requirements, which should be included, are set out in the Notes for Guidance on the Specification for Highway Works (Series NG1300), and is part of the Manual of Contract Documents for Highway Works.

If an alternative structure type or design standard is used then the information to be submitted will be different. For example, it is expected that a steel lattice tower would be designed in accordance with BS 8100. The requirements must be agreed with the HA.

3.4 Drawings

These should contain the basic information required to identify the telecom mast listed on the Design Check Certificate and the Data Sheet.

This typically includes details of the general arrangement of the telecom mast, the attachments, the number of antennae, microwave dishes, etc.

In some instances the Telecom Company may wish to include additional generic details, for example, details of the foundation designs. An example arrangement drawing is in Appendix A5; this includes structure and foundation information on the same drawing. If separate approval is required it is expected that separate drawings will be submitted for the structure and foundations.
Following receipt of a Statement of Mast Registration, the Telecom Company is required to apply for Construction Stage Approval to the local maintaining agents by submitting the following information.

Construction Stage Approval is only required if the telecom mast is to be erected on HA land or the fall distance of the mast or any part of it is onto HA land (see diagram on page 6).

The Telecom Company shall confirm that Site Specific checks have been carried out to confirm that the design is suitable for use at the proposed location, including details of safety barriers and any other restrictions/planning issues that may apply.

4.1 Compliance Certificate
A Signed statement by the Telecom Company, that the mast is suitable for use at this specific location. A sample of which is included in Appendix A4.

4.2 Construction Drawings including Foundations
The general arrangement of the mast, foundation layout and all other relevant information shall be included as part of this submission.

Foundations may be designed in accordance with any relevant geotechnical design standard. The actual ground/soil conditions at each site shall be confirmed as being in accordance with the foundation design which should form part of this submission.

4.3 Planning
The Telecom Company should also provide the following information that may assist the Approval of the Construction Stage.
1. Construction and erection programme.
2. Plant movements during construction and erection stages on HA land that may affect the network.
3. Details of future access requirements for the mast and equipment/antennae that may affect the network.
4. Any other information that may assist the Maintaining Authority.
Table 1 – Mast registration procedure and construction stage approval

- **Is the telecom mast to be located on HA land or could it fall onto HA Land?**
  - **No**
    - **No HA approval required.**
  - **Yes**
    - **Telecom company to decide if they require Generic Registration or Site Specific Technical Approval.**
      - **Option 1**
        - **Generic Registration Technical Approval.**
        - **Telecom company to submit Generic Mast System documents to AMP SSR for registration.**
      - **Option 2**
        - **Site Specific Technical Approval.**
        - **Signed AIP for Site Specific Telecom mast issued by local HA representative to Telecom Company.**
  - **Construction Stage Approval**
    - **Site Specific Technical Approval.**
    - **Site Specific Technical Approval and Construction Stage Request submitted to local Maintaining Agent for approval.**
5.1 Design Manual for Roads and Bridges.
BD 2 Technical Approval of Highway Structures
BD 26 The Design Of Lighting Columns
HD 22 Managing Geotechnical Risk, Part 1, Procedures for Geotechnical Certification

5.2 British Standards and BS EN Standards
EN40 Lighting Columns

5.3 Other Documents
PD 4567 Guidance on the use of BS EN 40-3-1 and BS EN 40-3-3
Manual of Contract Documents for Highway Works
Volume 2 - Notes for Guidance on the Specification for Highway Works
Series NG1300 Road Lighting Columns and Brackets, CCTV Masts and Cantilever Masts

6. Enquiries

All technical enquiries or comments on this Procedure should be directed to the Highway Agency's SSR Asset Management and Performance Group at the following address.

Asset Management & Performance Group
Safety Standards and Research
Highways Agency
Room 403
City Tower
Piccadilly Plaza
Manchester
M1 4BE
Email: telecom.masts@highways.gsi.gov.uk
This is to confirm that the Highways Agency (acting on behalf of the Overseeing Organisations of the Department for Transport; the Scottish Executive Development Department; the Welsh Assembly Government; the Department for Regional Development, Government Department in Northern Ireland) has registered the following Telecommunication Mast System for installation on trunk roads and other roads designated by the Overseeing Organisations.

This Registration relates only to the Mast System that is described on the appropriate Data Sheets and the Design/Check Certificates. Any parameters exceeding those on the Data Sheets would require a separate Registration.

For any particular site the Registration Holder (or Agent) will be required to obtain the necessary planning approvals and to liaise with the Overseeing Organisations or the regional representative to agree the terms and conditions of the installation and maintenance of the System including any control equipment on the ground. The requirements for a suitable vehicle restraint system to be agreed on a site specific basis with the Overseeing Organisations or the regional representative.

Copies of the Data Sheets and Design/Check Certificate shall be provided to the Overseeing Organisation for a particular site.

* This information shall be the same as that on the Data Sheet and the Design/Check Certificate.

Date

A.N. Authorised Person

Asset Management Performance - Structures
Safety, Standards and Research Directorate
The Highways Agency
City Tower
Piccadilly Plaza
Manchester, M1 4BE
Appendix A2 – Design and Check Certificate

Telecommunication mast system
Appendix A2 - Design and check certificate

Notes:

1. Delete as appropriate.
2. Data sheets shall specify the range of combinations of mast heights together with the
weights and windage areas of the aerials/dishes and mountings for which the mast
has been designed. The range of combinations of foundation depths and types shall
also be specified.
3. CEng, MICE, MIStructE or equivalent
4. A principal of the organisation responsible for the design or check
5. Organisation responsible for the design or check.

Mast information

Reference No. Revision No.
Date

1. We certify that the telecommunication mast system/structure/foundation1 reference
accurately shown on drawing No.
specified on the attached Data Sheet(s)2 No.
standards:
   i. .................................................................
   ii. .................................................................

   Signed ........................................................................
   Name of Designer .................................................................
   Engineering Qualifications3 .................................................................
   Position Held4 ........................................................................
   Name of Organisation5 .................................................................
   Date ........................................................................

2. We certify that the telecommunication mast system/structure/foundation1 reference
accurately shown on drawings No.
specified on the attached Data Sheet(s)2 No.
standards:
   i. .................................................................
   ii. .................................................................

   Signed ........................................................................
   Name of Checker ........................................................................
   Engineering Qualifications3 .................................................................
   Position Held4 ........................................................................
   Name of Organisation5 .................................................................
   Date ........................................................................
### Part A - General

- **Mast nominal height**: (m) Maximum, including antennas
- **Mast material**
- **Material grade** e.g. BS EN 10025 S275JR
- **Corrosion protection system**

### Mast Dimensions

<table>
<thead>
<tr>
<th>Section</th>
<th>Section 1 (top)</th>
<th>Section 2</th>
<th>Section 3</th>
<th>Section 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section length</strong></td>
<td></td>
<td></td>
<td></td>
<td>(m)</td>
</tr>
<tr>
<td><strong>Diameter</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wall thickness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tapered (Y/N)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: if tapered, give diameter at top and bottom of each section.

### Door openings

<table>
<thead>
<tr>
<th>Section</th>
<th>Section 1</th>
<th>Section 2</th>
<th>Section 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Height to bottom of door</strong></td>
<td></td>
<td></td>
<td>(m)</td>
</tr>
<tr>
<td><strong>Length of opening</strong></td>
<td></td>
<td></td>
<td>(m)</td>
</tr>
<tr>
<td><strong>Width of opening</strong></td>
<td></td>
<td></td>
<td>(m)</td>
</tr>
</tbody>
</table>

### Partial factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Wind</th>
<th>Dead load</th>
<th>Material strength</th>
</tr>
</thead>
</table>

### Meteorological parameters

- **Characteristic wind pressure, \( q(z) \)** in N/m\(^2\) at \( z = 10 \text{m} \) above ground level
- **Terrain category**

---

It is certified that the information given in this Data Sheet has been obtained in accordance with the requirements of the Documents listed on the Design Certificate dated

Signed on behalf of (Telecom Company)
Appendix A3 - Sample Data Sheet (Part 2)

Telecommunication mast system
Appendix A3 - Sample data sheet

Part B - Foundation data

- **Design load effects at base**
  - Shear: (N)
  - Moment: (Nm)

  Note: unfactored reactions used for foundation design shall be at ground level

- **Planted base only**
  - Planting depth: (m)
  - Standard soil type factor
  - Planted base diameter: (m) Including concrete surround, if any.

- **Flange plate base only**
  - No. of bolts
  - Bolt hole centres: (mm) PCD
  - Bolt diameter: (mm)
  - Bolt grade: (e.g. 8.8)

  Foundation size (m)
  - Length
  - Width
  - Depth

  Note: for flange plates with slotted holes a diagram shall be included with this data sheet.

Part C - Antennas, mountings and other attachments

- **Attachments**
  - No.1
  - No.2
  - No.3
  - No.4

  Shape factor, c
  Projected area, A
  Weight
  Mounting mid-height

- **Antenna mounts**
  - Drawing No.
  - Revision No.
  - Date

It is certified that the information given in this Data Sheet has been obtained in accordance with the requirements of the Documents listed on the Design Certificate dated

Signed on behalf of (Telecom Company)
Appendix A4 - Compliance Certificate

Telecommunication mast system
Appendix A4 - Compliance certificate

Name and address of registration holder

Mast information

Reference No. *

Revision No. *

Date *

We certify that:

1. The telecom mast identified above has been checked and the generic parameters assumed in the design are appropriate for the following site:

2. Site specific design elements (i.e. foundations) have been designed/checked and the global design has been checked in accordance with the following documents and are suitable for use at the above location:

   i. BD 2 Technical Approval of Highway Structures
   ii. BD 26 The Design of Lighting Columns*
   iii. HD 22 Managing Geotechnical Risk, Part 1, Procedures for Geotechnical Certification
   iv. The following standards:

Signed: ...........................................................................................................................

Name (printed): ..............................................................................................................

Position held (including qualifications): ...........................................................................

Telecom Company Name: ..............................................................................................

Date: ..............................................................................................................................

* Delete as appropriate
Appendix A5 – Example Arrangement Drawing

ALTERNATIVE PAD FOUNDATION ARRANGEMENT

GROUND LEVEL

2750 x 2750

T.O.C.

270

2000

6500

15000 OVERALL

375

6000

6590

ACCESS HATCH

650 x 160

GL(0)

Ø273 x 10 REF.

ROOT ASSEMBLY

15M EXAMPLE

ARRANGEMENT OF

Ø380MM GRP SHROUD CONTAINING ANTENNAE

Ø300MM TRANSMISSION DISH

Ø219 x 10

Ø273 x 16

Ø76 x 5

Notes:

NTS -946/10/SK01

15M OF TELECOM XYZ

15000 OVERALL

6000

6590

2000

650 x 160

GL(0)

2750 x 2750

ALTERNATIVE PAD FOUNDATION ARRANGEMENT

2750 x 2750

T.O.C.

270

1250
### Part A - General

<table>
<thead>
<tr>
<th>Mast nominal height</th>
<th>(m) Maximum, including antennas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mast material</td>
<td>Steel/Glass fibre reinforced plastic</td>
</tr>
<tr>
<td>Material grade</td>
<td>BS EN 10025 S275JR</td>
</tr>
<tr>
<td>Corrosion protection system</td>
<td>Galvanised</td>
</tr>
</tbody>
</table>

### Mast Dimensions

<table>
<thead>
<tr>
<th>Section 1 (top)</th>
<th>Section 2</th>
<th>Section 3</th>
<th>Section 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>6.590</td>
<td>6.000</td>
<td></td>
</tr>
<tr>
<td>Wall thickness</td>
<td>0.719</td>
<td>0.723</td>
<td></td>
</tr>
<tr>
<td>Tapered (Y/N)</td>
<td>10</td>
<td>16</td>
<td>15</td>
</tr>
</tbody>
</table>

Note: if tapered, give diameter at top and bottom of each section.

### Door openings

<table>
<thead>
<tr>
<th>Section 1</th>
<th>Section 2</th>
<th>Section 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height to bottom of door</td>
<td>1.050</td>
<td></td>
</tr>
<tr>
<td>Length of opening</td>
<td>0.650</td>
<td></td>
</tr>
<tr>
<td>Width of opening</td>
<td>0.160</td>
<td></td>
</tr>
</tbody>
</table>

### Partial factors

<table>
<thead>
<tr>
<th>Wind</th>
<th>Dead load</th>
<th>Material strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>1.2</td>
<td>1.05</td>
</tr>
</tbody>
</table>

### Meteorological parameters

- Characteristic wind pressure, \( q(z) \): 1.170 in N/m² at \( z = 10 \text{m} \) above ground level.
- Terrain category: not specified.

It is certified that the information given in this Data Sheet has been obtained in accordance with the requirements of the Documents listed on the Design Certificate dated 12.03.06.

Signed on behalf of (Telecom Company): A.N. Other

Date: 12.03.06
Part B - Foundation data

### Design load effects at base

<table>
<thead>
<tr>
<th>Shear</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20,000</td>
</tr>
<tr>
<td></td>
<td>13,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Moment</th>
<th>Nm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Note: unfactored reactions used for foundation design shall be at ground level.

### Planted base only

<table>
<thead>
<tr>
<th>Planting depth</th>
<th>m</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.0</td>
</tr>
<tr>
<td>Standard soil type factor</td>
<td>630 / 350 / 230</td>
</tr>
<tr>
<td>Planted base diameter</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Refer to PD 6547

(m) Including concrete surround, if any.

### Flange plate base only

| No. of bolts | 3 |
| Bolt hole centres | 450 |
| Bolt diameter | 22 |
| Bolt grade | 8.8 |

<table>
<thead>
<tr>
<th>Foundation size (m)</th>
<th>Length</th>
<th>Width</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.75</td>
<td>2.75</td>
<td>1.75</td>
</tr>
</tbody>
</table>

Note: for flange plates with slotted holes a diagram shall be included with this data sheet.

Part C - Antennas, mountings and other attachments

### Attachments

<table>
<thead>
<tr>
<th>No.1</th>
<th>No.2</th>
<th>No.3</th>
<th>No.4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shape factor, c</td>
<td>1.29</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Projected area, A</td>
<td>0.021</td>
<td>0.92</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>25</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Mounting mid-height</td>
<td>12</td>
<td>13.8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Antenna mounts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Drawing No.</td>
<td>946/10/Sk01</td>
</tr>
<tr>
<td>Revision No.</td>
<td>0</td>
</tr>
<tr>
<td>Date</td>
<td>1st January 2006</td>
</tr>
</tbody>
</table>

It is certified that the information given in this Data Sheet has been obtained in accordance with the requirements of the Documents listed on the Design Certificate dated 17.03.06

Signed on behalf of (Telecom Company) A.N. Other
The Telecom Companies have powers under the Telecommunication Act to erect masts. Why should we have to go through this procedure?
Highways Authorities are empowered by the Secretary of State to ensure the safety of the Network. The Telecommunication Act does not overrule this.

Why does the registration have to be in the name of the telecom company, I want to register it under my company so I can sell it to any telecom operator?
The masts are being erected under the permissions granted to Telecom Companies under the Act. Therefore they are underwriting the validity of the design process and accepting liability for the design. This responsibility cannot be delegated. However it is possible for a designer/checker to agree in principle a ‘pro-forma’ design for a generic mast. This could then be re-badged by each Telecom Company for formal submission to the HA. The format and details should be agreed with the HA.

I have selected the mast from the manufacturer’s data sheet why do I need registration?
Many data sheets will relate to the mast and not the specific combination of components (antenna configuration, shroud, microwave dish etc.) that is proposed. In addition, the designer/checker will not be identified and responsibility for the design will be unclear. Most data sheets contain caveats restricting use or design limitations. What is required is for the Highways Authorities to be sure that the mast selected has been designed by a competent person. It is permissible to ask the manufacturer to provide the design check certificate and documentation required.

Do I have to use BD 26 for the design?
No, any appropriate structural standard may be used in agreement with the HA.

My designer is not MICE/MIstructE but has 20 years experience is this acceptable?
The object of this is to confirm that the person designing the structure is competent. An engineering qualification will prove that the designer will have an appreciation of the design principles and be covered by the firm's professional indemnity insurance. Without specific qualifications, it will be necessary to check/confirm that PI insurance covers the named person as competent for carrying out this design work. A Team Leader should be overseeing and co-ordinating the design and shall have the authority to sign on behalf of the team. Generally this is expected to be a Partner or Director of the Design Organisation.
Why do I need to provide drawings?
To assist identification and to ensure that the mast constructed is that described on the Statement of Registration.

The data sheet specifies a specific product type antenna, can I use a different one?
The purpose of this information on the data sheet is purely for identification. If the antenna will be contained within the shroud and/or provided it does not exceed the weight limits specified it will be acceptable to change the type. If the antenna is not protected by a shroud, but it is the same general dimensions as that previously specified (or smaller) then it will be acceptable. If it is larger or a different shape then a new application will need to be submitted. When filling in this box include the term (or similar) after the type to allow for this.

The proposed mast will be behind a tree (or other obstruction like a fence) therefore it will not fall onto HA land, do I need registration?
Yes, it cannot be guaranteed that this tree will be in place throughout the whole design life of the mast, therefore registration is necessary.

How much will this registration cost?
For the registration process there are no charges associated, however there may be some site specific charges if the Telecom Company needs to arrange easements, traffic control, etc.

How long will this process take?
Generic Type Approval:
That depends on the complexity of the scheme and the information provided. Assuming proposals are clearly set out, the information required is provided and there are no mistakes or conflicting information then you should allow 30 days for registration.

Site Specific Technical Approval:
Where proposals will directly affect road users/operation of the network, restrictions may be imposed and in some cases permission will not be given. It is important to give as much notice as possible to allow proposals to be considered. It is expected that AIP’S should be submitted for agreement; these will be either be agreed or returned with comments within 6 weeks. Submission of check certificates and other details will follow that and formal agreement will be given within 5 weeks of receipt of acceptable completed documents. Telecom Companies must not assume completion within a shorter time.

How long is this registration valid?
The Telecom Company can withdraw a mast design at any time. This may
occur where the designer considers that the design is no longer valid/applicable, if the structure has been replaced by a different type, or if the design standards used have been superseded.

It is important to understand that the responsibility for this structure rests with the Telecom Company. If design standards have been superseded invalidating design assumptions then as the owners of the structure they are liable. For that reason the Telecom Company should regularly review the status of their registered structures and inform the HA if they wish to withdraw that structure. It is assumed that once registered, a product will continue to be used until the HA is notified that it should be withdrawn.

**Does this mean that the Telecom Company can erect this mast on the Motorway?**

No, motorways and protected streets are excluded from the powers granted under the Telecommunications Act.
Safe driving at roadworks

During 2005, five workers were killed and 12 seriously injured in the course of their work on Highways Agency roads. This was the worst year since 1999.

For the safety of all road users and roadworkers, drivers approaching roadworks are advised to:

- Keep within the speed limit – it is there for your safety.
- Get into the correct lane in good time – don’t keep switching.
- Concentrate on the road ahead, not the roadworks.
- Be alert for works’ traffic leaving or entering roadworks.
- Keep a safe distance – there could be queues in front.
- Observe all signs – they are there to help you.

Remember, tiredness can kill. Take regular breaks from driving.