



Design Standards for Industrial Roads

Transport Development Control
May 2017



INVESTORS
IN PEOPLE



Design Standards for Industrial Roads

Introduction

Although the general principles and advice given elsewhere in National Guidance apply equally to Industrial Roads the layout of these roads has a different emphasis from that of Residential Roads. In order to cater for the larger and heavier vehicles the roads need to be of greater width and strength. The Design Standards to cater for this traffic are set out in this guidance.

Contents

- 1 Design Standards
- 2 Basic Industrial Road Data (Table 1)
- 3 Construction Data (Tables 2, 3 & 4)
- 4 Visibility Splays (Table 5)
- 5 Turning Spaces (Figure 1)
- 6 Access to Premises (Figure 2)
- 7 Typical Section (Figure 3)

Design Standards

Industrial Road Categories

Industrial Estate Roads have been categorised as follows:

- Major Industrial Roads (Major IR)
- Minor Industrial Roads (Minor IR)

In general only cul-de-sac of less than 200m in length should be considered as Minor Industrial Roads, with all others being Major Industrial Roads. It is not essential to use both categories in any one development.

Details of Design

These are summarised in Table 1. These should be read in conjunction with the following notes:

- Forward Visibility is measured on the centre line of the carriageway (see also Visibility Splays)
- On Major Industrial Roads where the gradient is greater than 6% (1 in 16.7) an increased carriageway width may be required. (see also Gradients)
- Footways must be provided on both sides of the carriageway; the width of 2m may need to be increased to 3m in certain cases to cater for heavier pedestrian flows and shared cycle use
- Increased carriageway width may also be required on sharp bends to enable larger vehicles to pass each other.

Visibility Splays

Within Industrial Estates visibility splays are to be provided at all junctions as shown in Table 5. Where a new estate road joins the existing wider highway network visibility will be required to be in accordance with National Guidance.

Visibility on curves, at summits and at junctions shall be provided between points 1.05m above the carriageway. (See also Forward Visibility)

Turning Space

A Turning space shall be provided at the end of each cul-de-sac. This turning space must be in accordance with one of the diagrams shown in Figure 1.

The positioning of accesses to individual premises with turning spaces is recommended as this discourages casual parking which obstructs turning movements

Gradients

The gradients of carriageways shall normally not exceed the following limits:

- Maximum gradient 8.33% (1 in 12)
- Minimum gradient 0.83% (1 in 120)

In exceptional cases steeper gradients may be approved by the Engineer. Where the channel is formed of pre-cast concrete or other suitable channel blocks, the gradient shall not be less than 0.66% (1 in 150). (See also Details of Design)

Cul-de-Sacs

Cul-de-sac over 200m in length are undesirable but will be considered in certain circumstances (e.g. to avoid sterilisation of land) up to a maximum of 400m in length beyond which a second access to the existing highway network should be provided.

Where the 200m maximum length is exceeded intermediate turning facilities must be provided in accordance with the turning space requirements at a maximum spacing of 200m.

Right Turn Lanes

Where an Industrial Estate Road joins an existing Distributor Road, offside diverging (right turn) lanes may be required to be provided by the Developer, together with associated traffic signs, central refuges and road markings. Under normal circumstances offside diverging lanes will be required at all junctions between Distributor Roads and Major Industrial Roads. Details of Pedestrian facilities may also be required to be agreed with the Engineer, based on the latest Department of Transport advice.

Roundabouts

The use of both roundabouts and mini-roundabouts will be considered where appropriate.

Construction Specification

Carriageway and Footway construction shall be in accordance with Tables 2, 3 & 4 and Figure 3.

Bituminous mixtures must be laid in accordance with BS 594987.

Access to Premises

For access to premises radius kerbs (normally 6.0 metres) should be provided. The width of accesses to premises will depend on the size and nature of the premises but should not be less than 6.0m. In addition an area of footway of 2m long on each side of the access shall be constructed to carriageway standards to reduce the effects of vehicles mounting the kerb (see Figure 2).

The layout of these premises shall be such that all vehicles can leave and regain the public highway in a forward direction.

Parking

All necessary provision for vehicular parking, including deliveries, should be clear of the public highway. In general parking to serve premises is not acceptable on the highway and the Developer will be expected to meet the full costs of Traffic Regulation Orders, signs and road markings required to enable waiting restrictions to be implemented, where appropriate. General off-street parking provision shall be in accordance with the standards set out in the current edition of the Non Residential Parking Guidance produced by East Sussex County Council.

Table 1
Summary of Basic Data
Industrial Roads

| Category | Design Speed | Minimum Widths | | Bend centre line radius | | Minimum forward visibility | Minimum distance between centre lines of junctions | | Minimum distance between centre line or first junction and commencement of road | Normal Maximum Gradient |
|-----------------------|------------------|------------------|-------------|-------------------------|---------|----------------------------|--|---------------|---|-------------------------|
| | | Carriageway | Footway | Normal | Minimum | | Same side | Opposite side | | |
| Major Industrial Road | 50kph (30mph) | 7.3m | Two x 2m | 200m | 90m | 70m | 80m | 40m | 75m | 8.33% (1 in 12) |
| Minor Industrial Road | 25kph (15mph) | 7.3m Or 6.75m | Two x 2m | 45m | 20m | 25m | 24m | 10m | 20m | 8.33% (1 in 12) |

Table 2
Construction Details
Carriageways
Industrial Roads

| Layer | Material | Road Category: All Industrial Estate Roads Thickness of Layer (mm) |
|---|--|---|
| Surface Course | HRA 30/14 Surf 40/60 with 14/20mm Pre Coat chips to EN 13108-1 | 45mm |
| Binder Course (Material to be approved by the Engineer) | 0-20mm nominal size dense bitumen macadam or 60% (0-20mm) hot rolled asphalt Binder Course to BS13108-1 | 60mm |
| Base Course | (0-32mm) nominal size dense bitumen macadam | 160mm |
| Sub-Base | Granular sub-base material Type 1 or Recycled permitted as approved by the engineer | From Table 4 but not less than 150omm |

Table 3
Construction Details
Footways
Industrial Roads

| Layer | Material | Footways | Vehicle crossings |
|---|--|-------------------------|--|
| | | Thickness of layer (mm) | Thickness of layer (mm) |
| Surface Course (Material to be approved by engineer) | (0-6mm) nominal size dense bitumen macadam or (0-6mm) nominal size dense bitumen macadam | 20mm | Construction to be as per adjacent carriageway |
| Binder Course | (0-20mm) nominal size dense bitumen macadam | 60mm | |
| Sub-base | Granular sub-base material Type 1 or Recycled permitted as approved by the engineer | 150mm | |

Table 4
Sub Base Thickness
Industrial Road

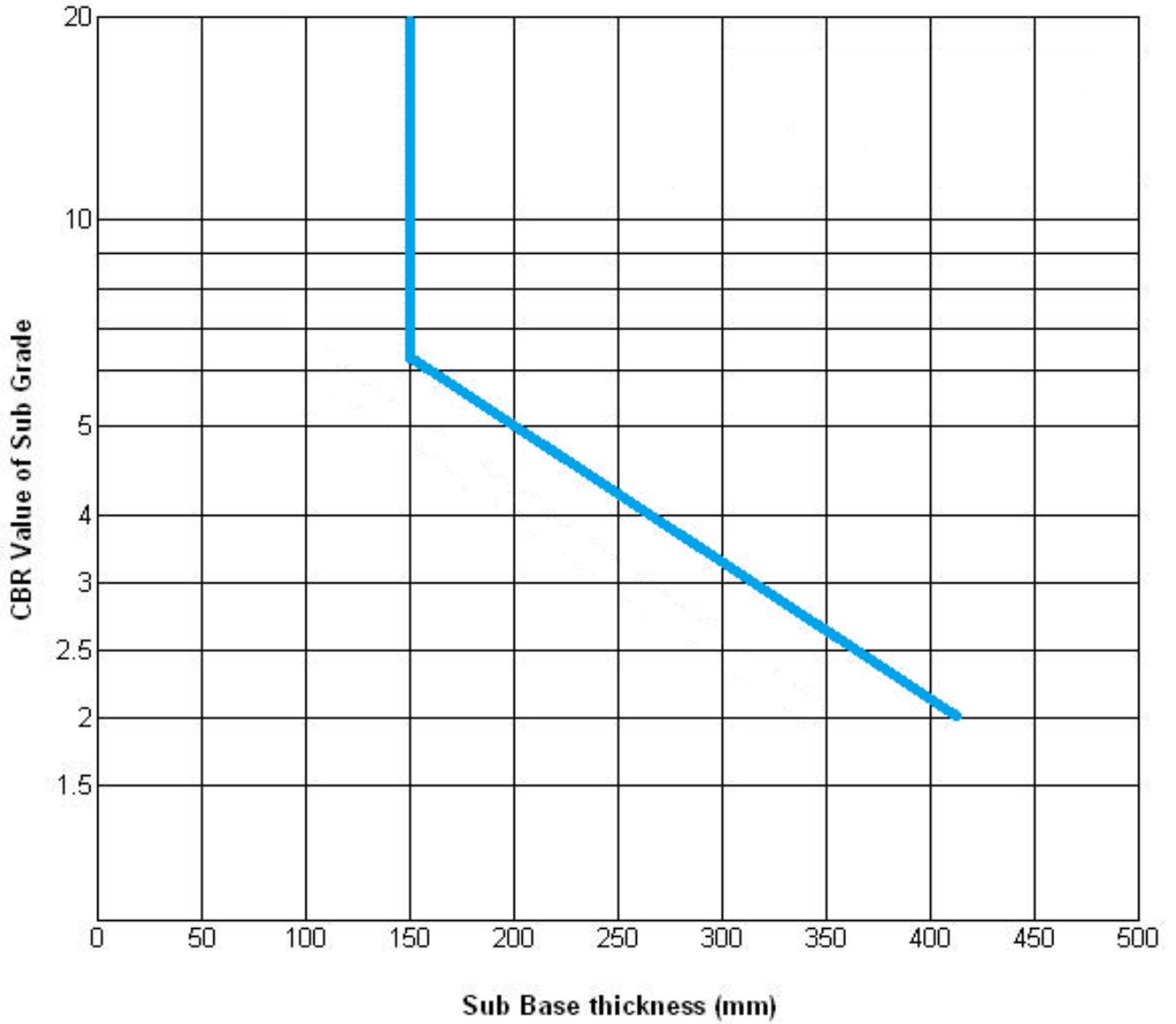


Table 5
Visibility Splays within
Industrial Estates

| Main Road Type | Distributor Road | | | Major IR | | | Minor IR | | |
|----------------|------------------|-----|-----|----------|-----|-----|----------|-----|-----|
| Side Road Type | x | y | r | x | y | r | x | y | r |
| Major IR | 4.5m | 70m | 15m | 4.5m | 70m | 15m | | | |
| Minor IR | 4.5m | 70m | 15m | 2.4m * | 70m | 15m | 2.4m * | 25m | 12m |

Note: *These splays also to be used at the point of access of larger Industrial premises onto Industrial Estate Roads

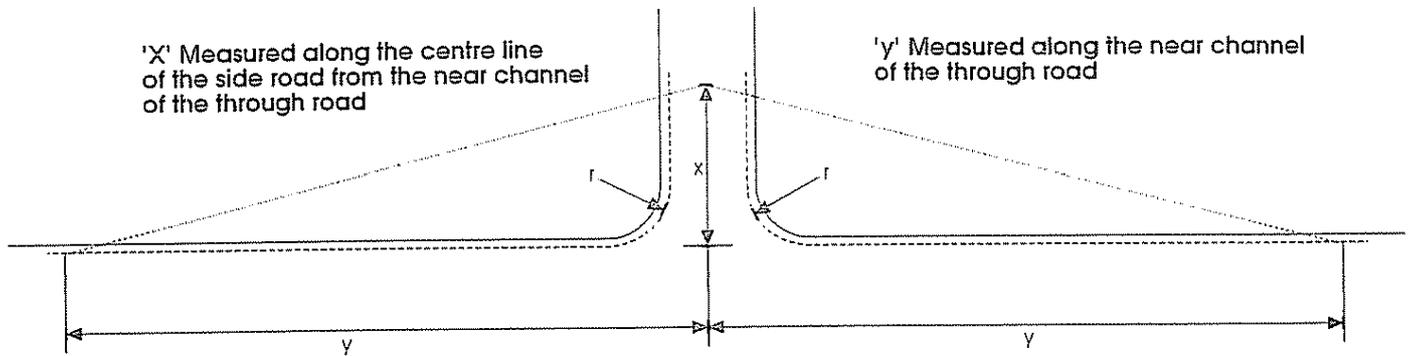


Figure 1
Turning Spaces
Industrial Estates

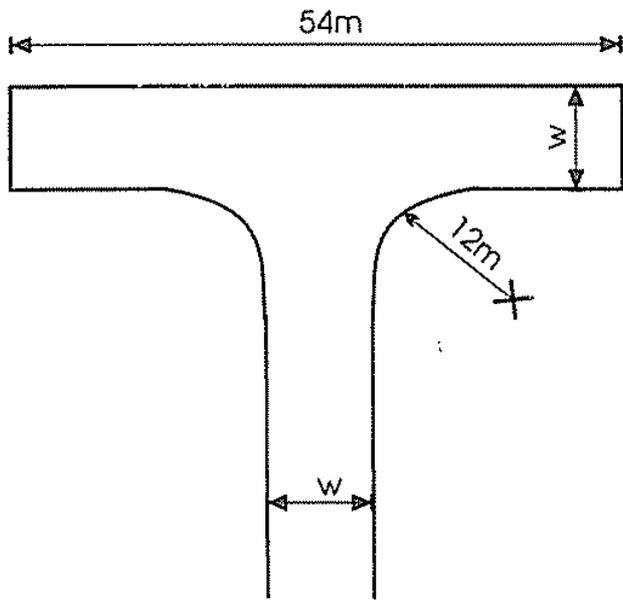
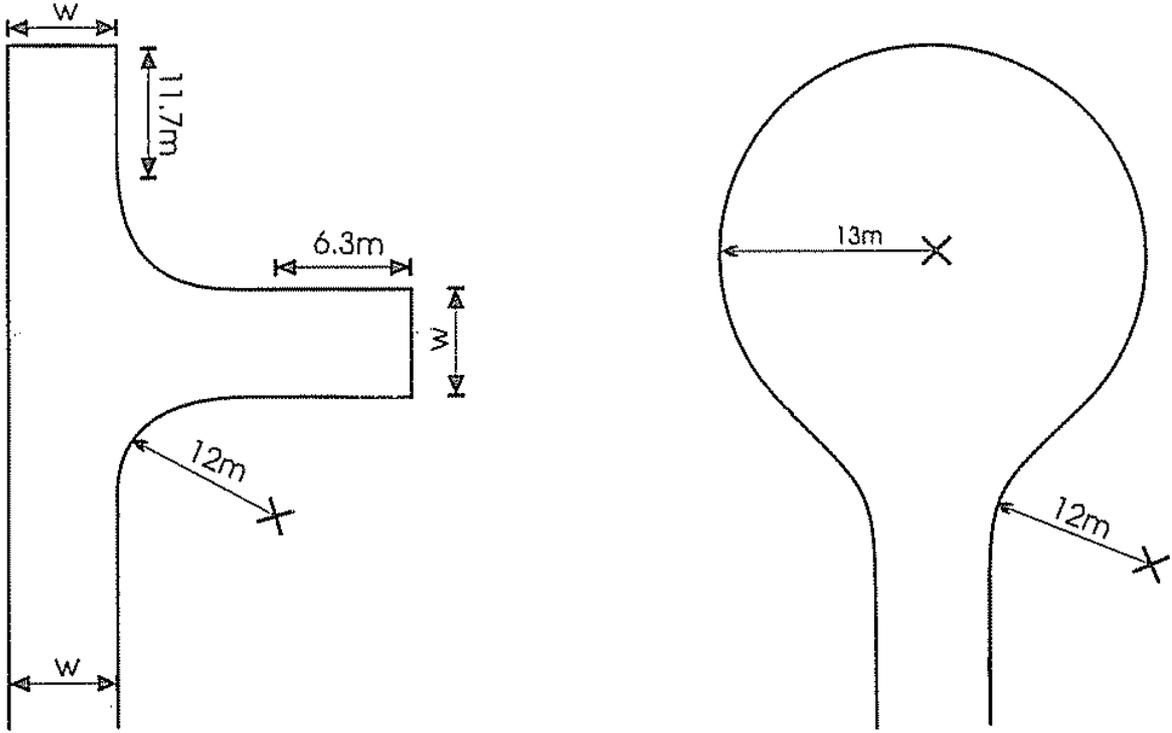
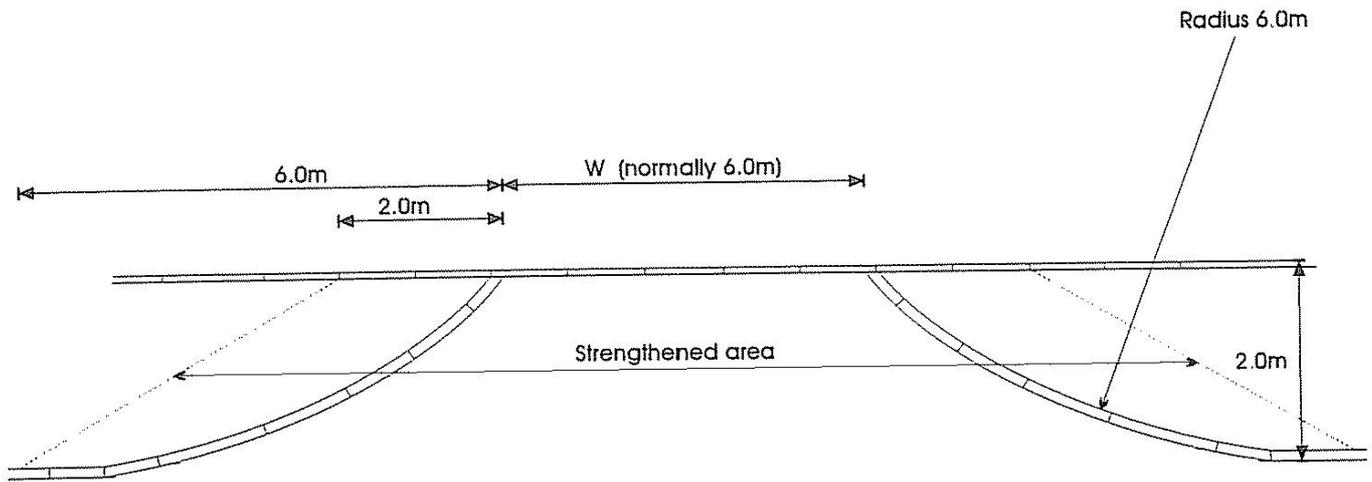


Figure 2 Access to Premises Industrial Roads



For Visibility splays see note on Table 5

Where a footway crosses the site pedestrian ramp kerbs and tactile paving shall be provided and laid out in accordance with the requirements of 'Guidance on the use of tactile paving surfaces'

Figure 3 Typical Section – Hot Rolled Asphalt Road Construction - Industrial Roads

