

Transport Malta

Procedure for the Selection and Installation of Vertical Traffic Signs

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1 Scope

1.1 This procedure covers the selection of the performance characteristics and the installation methodology of vertical permanent traffic signs.

2 Acknowledgement

2.1 Transport Malta acknowledges the kind permission of Leicestershire County Council, Department of Highways, for the use in this document of copyright drawing details and Charts A, B, C and D.

3 Applicability

3.1 This procedure is applicable to arterial and distributor roads.

4 Specifications

4.1 Each and every road section may require specific performance and installation characteristics. Users of this document are to ensure that the Technical Appendices to the Transport Malta Series 1200 Specification are properly compiled when so required by the prevailing site conditions and that they address the particular technical characteristics of the road section/s under consideration.

5 Current Legislation

5.1 The legislative aspects related to vertical traffic signs are dealt with in Malta Subsidiary Legislation 65.05.

6 Classes of Vertical Traffic Signs

6.1 There are three (3) main classes of vertical traffic signs:

A. Regulatory Signs (Circular)

These comprise all the signs which give notice of requirements, prohibitions or restrictions. They may be supplemented by plates.

B. <u>Warning Signs (Triangular)</u>

These signs give warning of a hazard ahead. They may be supplemented by plates.

C. Informatory Signs (Rectangular)

These are generally directional and provide information about the route.

Note: This procedure does not cover informatory signs related to tourist destinations and facilities, services, parking, cyclists and pedestrians, temporary and emergency, light signals.

7 Illumination of Vertical Traffic Signs

- 7.1 The illumination requirements for each and every traffic sign are indicated in the UK Traffic Signs Regulations and General Directions.
- 7.2 There are two (2) types of vertical traffic sign illumination:
 - a) Integral to the signface film material by retroreflection
 - b) External to the sign by electrical lighting luminaires.

This document covers illumination by <u>retroreflection</u> only.

8 Selecting the Class of Retroreflective Film Material for Traffic Signs

8.1 The retroreflective class requirements recommended for specific road environments shall be as follows:

Table 1 Sign Face Material Selection (Retroreflection)

TM Road Class	Prevailing Illumination				
	Bright Lighting with many	Normal Lighting	Unlit		
	External Light Sources				
Arterial	DIN 67520-4, RA3	DIN 67520-4, RA3	DIN 67520-4, RA3		
Distributor	DIN 67520-4, RA3	EN 12899-1, RA2	EN 12899-1, RA2		
(AADT ≥ 19,000)					
Distributor	EN 12899-1, RA2	EN 12899-1, RA2	EN 12899-1, RA2		
(AADT ≤ 19,000)					
Tunnels	Not applicable	EN 12899-1, RA2	Not applicable		

9 Signface Film Colours

9.1 The colours of all retroreflective sign face materials shall comply with the chromaticity requirements of EN 12899-1.

10 Sign Post Colours

- 10.1 The sign posts must be galnanised and need not be painted (excluding Zebra crossing beacons, hazard markers, load gauges and portable traffic signals).
- 10.2 To conserve uniformity and reduce maintenance costs the natural *"grey"* colour of proprietary galvanic coatings should be adopted.
- 10.2.1 Should it become necessary the "grey" standard colour indicated in Table 2 shall be used for the painting of posts and fittings:

1 a b c 2 $1 a c b c c c c c c c c c c c c c c c c c$

Colour	BS 381C (Number)	Common Name	Notes
Grey	693	Aircraft Grey	Posts, fittings, Sign
			faces and backs of signs

10.3 The backs of signs, bracing and painted fixing clips must be grey.

11 Regulatory Signs

- 11.1 Sign Sizes
- 11.2 The size of regulatory signs shall be appropriate for the prevailing traffic speed for the section of road in which they are erected. For the purpose of this procedure the prevailing traffic speed shall be equated to the 85th percentile approach speed².
- 11.3 The size of regulatory signs shall be as indicated in Annex 1.
- 11.4 <u>Visibility</u>
- 11.4.1 The desirable minimum clear sightline distances for signs shall be the following:

Table 3: Minimum Clear Visibility Distances³

85 th Percentile speed of	Minimum clear visibility distance (m)
private cars (km/h)	

¹ See UK TSM1, Appendix 1;

² See TM Volume 5, ADT TD 9/00, Chapter 1

³ See UK TSM3, Table 1-1; UK TSM4, appendix A.

Up to 30	45
31 to 50	60
51 to 60	60
61 to 80	75

- <u>"STOP</u>" and <u>"GIVE WAY"</u> Regulatory Signs 11.5
- The desirable distances and size of "STOP" and "GIVE WAY" signs 11.5.1 shall be the following:

Table 4: STOP and GIVE WAY Regulatory Signs⁴

85 th Percentile	STOP			GIVE WAY
speed of private cars (km/h)	Sign Size (mm)	Visibility Distance (m)		Sign Size (mm)
Up to 30	750	15		600
31 to 50	750	30		600
51 to 60	900 (750)	45		750 (600)
61 to 80	1200 (900)	70		900 (750)

12 Warning Signs

The desirable sign sizes and the distance of the sign from the 12.1 hazard shall be as follows:

Table 5:	Warning	Signs	- Size and	distance	from	Hazard⁵
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85 th Percentile speed of private cars (km/h)	Height of Triangular warning signs (mm)	Supplementary plate (x-height, mm)	Distance of sign from hazard (m)
Up to 30	600	62.5	45
31 to 50	600	62.5	45
51 to 60	750 (600)	75 (62.5)	45-110
61 to 80	900 (750)	100 (75)	110-180

⁴ See UK TSM3, Tables 3-1, 3-2, 3-3; ⁵ See UK TSM4, Appendix A

13 Informatory Direction Signs

- 13.1 <u>Route Status⁶</u>
- 13.1.1 Contrary to UK practice the status of arterial, distributor and secondary roads in Malta is not denoted by specific colour coding.
- 13.2 <u>Types of Directional Signs</u>
- 13.2.1 The following types of Directional informatory signs may be used:
 - i. Advance Direction Signs
 - ii. Direction Signs
- 13.3 <u>Colour</u>
- 13.3.1 Informatory direction signs shall have a blue background with a white legend and border.
- 13.4 Form and Arrangement
- 13.4.1 The form and arrangement shall be as selected from one of the following:
- 13.4.1.1 Advance Direction Signs (Post Mounted)
 - i. Advance Direction Map type
 - ii. Advance Direction Stack type
 - iii. Advance Direction Dedicated Lane
- 13.4.1.2 Advance Direction Signs (Gantry Mounted)
 - i. Advance Direction Sign for Junction without Lane Drop
 - ii. Advance Direction Sign for Junction with Lane Drop
- 13.4.1.3 Direction Signs (Low or High Post Mounted)
 - i. Direction Flag Type (Junction, Chevroned)
 - ii. Direction Rectangular (Junction, Arrowed)
- 13.5 Route Numbers and Distances
- 13.5.1 The route number shall be inserted in brackets.
- 13.5.2 The distance may be indicated as follows:
 - i. In Advance Direction Signs.

⁶ For UK practice see LTN 1/94

ii. In Direction Signs.

- 13.7 The alphanumeric characters used in traffic signs shall be the UK Transport Medium style⁷ amended as required to include Maltese language markers See Annex 2.
- 13.8 <u>"Tiles" and "Tile Size"</u>
- 13.8.1 To ensure the proper letter spacing the characters shall be placed on virtual "tiles" (See Annex 1).⁸
- 13.8.2 All design spaces shall be measured to the edge of the virtual "tile" and not to the actual characters.
- 13.8.3 The size of the alphabet shall be specified in terms of its "x-height". This is defined as the height of the lower case letter "x ". The "x-heights" shall be as indicated in Annex 3.
- 13.8.4 The unit of measurement shall be the "stroke width (sw)" which is $\frac{1}{4}$ of the "x-height".
- 13.8.5 The tile height shall be twice (2 times) the "x-height".
- 13.8.6 The tile width shall be as indicated in Annex 4d.
- 13.8.7 The spacing between two (2) words shall be 2.5sw.
- 13.8.8 The standard border shall have a width of 1.5sw and a radius of 1.5sw.

Table 6: Sign Letter Sizing Ratios - Summary

Element		Ratio	Notes
x-height	II	4sw	
tile height	I	2 times the x-height	
tile height	II	8sw	
tile width	See	Annex 4d ⁹	UK DfT Drawings TM1, TM2, TM3 – See Annex 2
Spacing between 2 words	=	2.5sw	
Width of standard border	=	1.5sw	

⁷ See UK TSRGD, Part 1, Schedule 13.

⁸ For guidance see UK TSM7, 2

⁹ See UK TSM7, Appendix C

13.9 <u>Panels</u>

- 13.9.1 The use of panels is permitted.
- 13.9.2 Panels of the appropriate background colour may be used on both advance direction and direction signs to indicate cycle routes and tourist attractions.
- 13.9.3 Panels with place name destinations shall not be used on flag type direction signs.
- 13.9.4 The use of "patches" designating a route number is prohibited.

14 The Positioning of Traffic Signs

- 14.1 <u>Siting</u>
- 14.1.1 Drivers in Malta are accustomed to signs being sited on the nearside of the carriageway. Such positioning should therefore represent the general practice.
- 14.1.2 Siting on the offside is however appropriate in certain circumstances;

Examples: Sign duplication (No Entry), Sharp left-hand bends, Roundabouts, Refuges.

- 14.1.3 At tunnels and underpasses overhead signs may be more appropriate.
- 14.2 Relaxations and Departures from the Minimum Standard
- 14.2.1 Achieving desirable minimum standards may not always be possible due to specific site constraints. Where rectification would result in only a minimal cost-benefit improvement "relaxations" may be considered.
- 14.2.2 In situations which cannot be overcome even by "relaxations" a "departure" from standard is required.
- 14.2.3 Such "relaxations" and "departures" must be documented and signed in the Project File.
- 14.3 <u>Lateral Clearances</u>
- 14.3.1 The minimum lateral clearances for traffic signs shall be as follows:

Table 7 Traffic Sign Lateral Clearances¹⁰

From	Signs and Posts	Remarks
Edge of Single	450mm min.	Increased to 600mm for
Carriageway		severe crossfall
Edge of Double	800mm min.	None
Carriageway		

¹⁰ See UK TSM1, 6;

From	Signs and Posts	Remarks
Edge of Cycleway	500mm min.	None
Edge of Central	600mm min.	None
Reserve of Dual		
Carriageway		
Hard Verge	600mm min.	From hardening

- 14.3.2 When posts are erected in narrow footpaths the clear walkway width should not be less than 1.0m.
- 14.4 <u>Mounting Heights</u>
- 14.4.1 The minimum mounting heights for traffic signs shall be as follows:

Table 8 Traffic Sign Mounting Heights¹¹

	Sign Type					
Edge	Regulatory / Warning / Information	Direction				
Verge	2.2m	1.2 / 1.8m#				
Footpath	2.3m	2.3m				
Cycleway	2.4m	2.4m				
Footpath / Cycleway	2.4m	2.4m				
Note	# 1.8m desirable to avoid tyre splas	h				

¹¹ See UK TSM1, 6;

14.4.2 No assembly should exceed 4.0m in overall height above ground level unless absolutely necessary to ensure the visibility of the signs at particularly difficult locations.

14.5 <u>Orientation</u>

14.5.1 To avoid or minimise specular reflection (mirror-like reflection) the signs should be set at the orientation angles indicated in TM Drawing 35/11.

14.6 <u>Sign Overloading</u>

- 14.6.1 Research and experience has indicated that drivers can only assimilate a limited amount of information whilst driving¹². Sign overloading should therefore be avoided. This is applicable to signs mounted on both single or separate posts.¹³
- 14.6.2 Generally not more than two (2) signs should be mounted on any one (1) post. Supplementary plates may be regarded as one (1) sign.
- 14.6.3 Exceptionally, three (3) signs may be erected on any one (1) post provided that none requires a supplementary plate.
- 14.7 Order of Sign Combinations
- 14.7.1 A warning sign/s should not be mounted on the same post as a "STOP" or "GIVE WAY" or terminal "SPEED LIMIT" sign.
- 14.7.2 The permitted sign combinations should be placed in the following order from top to bottom:
 - a) "Stop" or "Give Way" or any triangular warning sign/s;
 - b) Speed Limit signs;
 - c) Other circular signs;
 - d) Rectangular signs;
- 14.7.3 Where two (2) or more warning signs are mounted together the sign relating to the hazard *first* encountered should be placed upper-most.
- 14.7.4 Where rectangular signs are erected together or a supplementary plate is mounted below a triangular sign, the signs should be separated by a space not exceeding the "x-height" of the lettering on the lower sign. All other signs may be butted together, one above the other.

¹² Information overloading increases with age; See TSM3, 1.25 and TSM 4, 1.26

¹³ Experience from the Naxxar-Salini Road Traffic Sign "Pilot" Project indicated sign overloading due to the heavy concentration of road hazards over a short distance especially "Concealed Exits".

14.8 <u>Tolerance for Re-siting Distance</u>

14.8.1 Permanent features which cannot be altered (bends, crests, buildings, accesses, trees, boundary walls, lighting columns, bus stops, etc) may require that particular signs be re-sited from their desirable position. In such cases it is preferable to increase the standard distance between the sign and the site to which it relates rather than reduce it. Such re-location should not increase the distance by more than 10%. Greater variations shall require the insertion of a signed "Relaxation" or "Departure" from the Standard in the project file.

15 Traffic Sign Post and Foundations - Sizing

- 15.1 The traffic sign post and foundation sizing shall be selected as follows:
 - i. Using the example in TM Drawing RD 35/11 calculate:
 - a. the area of each sign erected on the post (See Table 10 for standard areas)
 - b. the total sign area on the post (Add all areas);
 - c. the height of all the signs on the post;
 - d. the height to the centroid.
 - ii. Using Charts A or B select:
 - iii. The number of posts;
 - iv. The post diameter and wall thickness (See Table 10 for wall thickness);
 - v. The foundation Type A to I;
 - vi. Using Transport Drawing RD 35/11 and Chart C select the appropriate foundation width, depth and length.

Type of Basic Sign	Size (mm)	Area (m ²)	Working Drawing Reference ¹⁴
STOP	750	0.47	UK DfT Drg. P601.1
STOP	(900)	0.67	UK DfT Drg. P601.1
STOP	(1200)	1.19	UK DfT Drg. P601.1
Roundel	(600)	0.28	
Roundel	750	0.44	Example - LIK DfT Dra P616
Roundel	(900)	0.63	Example - OK DIT DIG. FOTO
Roundel	(1200)	1.13	
Triangle	600	0.24	UK DfT Drg. P500
Triangle	(750)	0.37	UK DfT Drg. P500
Triangle	(900)	0.53	UK DfT Drg. P500
Triangle	(1200)	0.94	UK DfT Drg. P500

 Table 9: Areas of Non-Rectangular Signs

¹⁴ UK Department of Transport Working Drawings

Standard	Outside Diameter (mm)	Wall Thickness (mm)	Tensile Yield (N/mm ²)
	60.3	3.2	
EN 10210-1	76.1	4	
and	88.9	5	
EN 10210-2	114.3	6.3	
	139.7	8	275 (Min.)
Туре	168.3	8	
S275JOH /	193.7	10	
S275J2H	219.1	12	
	244.5	12	

Table 10: Tubular Posts - Wall Thickness

16 Annexes

- 1 Sizes of Regulatory Traffic Signs
- 2 Transport Medium Alphabet UK DfT Drawings TM1, TM2, TM3
- 3 Directional Signs "x-heights" and Siting Distances
- 4a Placement of Characters on the Virtual "Tiles"
- 4b Horizontal Spacing of Different Sign Elements
- 4c Abbreviated Place-names and Spacings
- 4d Tile (Virtual) Widths

17 Reference Documents

- 1 Malta Subsidiary Legislation 65.05
- 2 The Highway Code (Malta)
- 3 ADT MCRW, 2003, Volume1, Series 1200
- 4 ADT MCRW, 2003, Volume 2, Series NG1200
- 5 UK TSRGD, 2002
- 6 UK TSM1, TSM3, TSM4, TSM7
- 7 UK LTN 1/94
- 8 UK Leicestershire County Council, Department of Highways, Drawings SD/12/1 to 6, 8, 9, 13 to 15 (with permission)
- 9 MSA EN 12899-1
- 10 DIN 67520-4

Diagram Number	Dimension	85th percentile speed of private cars (km/h)						
		Up to 30	31 to 50	51 to 60	61 to 80	81 to 100	Over 100	
570	x-height	-	62.5	62.5 (75)	75 (100)	100 (125)	125 (150)	
601.1			•	See Tab	ble 3.2		· · · · ·	
602				See Tab	ole 3.2			
606 (Note 5)	Diameter							
607	x-height							
608	x-height							
609	x-height							
610 (Note 6)	Diameter							
611 (Note 6)	Diameter	450	(450) 600	(600) 750	(750) 900	(900) 1200-	1200-	
611.1 (Note 7)	Diameter	600	600 (750)	750 (900)	-	-	-	
612 (Note 5)	Diameter	450	(450) 600	(600) 750	(750) 900	(900) 1200-	1200-	
613 (Note 5)	Diameter	450	(450) 600	(600) 750	(750) 900	(900) 1200-	1200-	
614 (Note 5)	Diameter	450	600	600 (750)	750 (900)	900 (1200)-	1200-	
615	Diameter	600	750	(750) 900	(900) 1200	1200	-	
615.1	x-height	62.5	75	(75) 100	(100) 125	125	-	
616 (Note 5,11)	Diameter	(450) 600	(600) 750	750	(750) 900	(900) 1200-	1200-	
617	Diameter	450	(450) 600	(600) 750	(750) 900	(900) 1200-	1200 -	
618	x-height	(37.5) 50	(50) 62.5	-	-	-	-	
618.1	x-height	(37.5) 50	(50) 62.5	(62.5) 75	(75) 100	100-	-	
618.2				One size	e only			
618.3				One size	e only			
618.3A				One size	e only			
618.4				One siz	e only			
619 (Note 12)	Diameter	450	(450) 600	(600) 750	(750) 900	(900) 1200-	1200-	
619.1	Diameter	450	(450) 600	(600) 750	(750) 900	(900) 1200-	1200-	
619.2	Diameter	450	(450) 600	(600) 750	(750) 900	(900) 1200-	1200 -	
620 (Note 13)	x-height	(37.5) 50	(50) 62.5	(62.5) 75	(75) 100	(100) 125	125	
620.1	x-height	(37.5) 50	(50) 62.5	(62.5) 75	(75) 100	(100) 125	125	
622.1A	Diameter	450	(450) 600	(600) 750	(750) 900	(900) 1200-	1200 (1500)	
622.2	Diameter	450	(450) 600	600	750	(750) 900	900-	
622.4	Diameter	600	600	(600) 750	(750) 900	900-	_	
622.5		The si	ze of this sig	n is not relate	d to traffic sp	beed (see No	te 8)	
622.6		The si	ze of this sig	n is not relate	d to traffic sp	beed (see No	te 8)	
622.7	Diameter	450	(450) 600	(600) 750	(750) 900	(900) 1200	-	
622.8	Diameter	450	600	750	900	1200	1200	
622.9	x-height	(37.5) 50	62.5	75	100	125	125	
625.1		The si	ze of this sigr	n is not relate	d to traffic sp	beed (see No	te 8)	
629A	Diameter	750	750	(750) 900	(900) 1200		-	

Annex 1: Sizes of Regulatory Traffic Signs (All references and notes relate to the UK Traffic Signs Manual, Chapter 3).

Diagram Number	Dimension	85th percentile speed of private cars (km/h)						
		Up to 30	31 to 50	51 to 60	61 to 80	81 to 100	Over 100	
					1200			
629.1	Diameter	600	600	(600) 750	(750) 900 900		-	
629.2A	Diameter	750	750	900	1200 1500		1500-	
632	Diameter	-	600	600 (750)	750 (900)	900 (1200)	-	
633	Diameter	450 (the la	arger size of	540 can be u	sed at the dis	scretion of the	e police)	
636		See para 6.27						
636.1			Se	e working dra	awing P 636.	1		
636.2				One size	e only			
637.1				See par	a 6.33			
637.2				One size				
620				See par	a 6.33			
639.1				See par	a 0.33			
630				See par	a 0.33 a 6 33			
639 1B				See par	a 7.47			
640				See par	a 6 33			
640.1		Т	o suit size of	parking meter	er cover and	leaend used		
640.2A			0 00.11 0.20 01	See par	a 6.33	logona acoa		
640.3				One size	e only			
640.4				One size	e only			
640.5				One size	e only			
642 (Terminal)	Diameter	450	600	600 (750)	750 (900)	900-	900 (1200)-	
642 (Repeater)	Diameter	-	300	300	450	600-		
642.2A				One size	e only			
642.3			r	See par	a 9.13	1	r	
645	x-height	50	62.5	75 (100)	100 (125)	125 (150)	150 (200)	
646				See par	a 9.10			
647				One size	e only			
650.1				See par	a 9.29			
650.2				See par	a 0.33			
651				See par	a 0.33 a 5 30			
652	Height	450	450	450	675	675	675	
660	Ticigitt	400	400	See par	a 7 47	070	010	
660.3				See par	a 7.47			
660.4				See par	a 7.47			
660.5				See par	a 7.47			
660.6				See para	a 7.47			
660.7				See par	a 7.47			
661A				See par	a 7.47			
661.1				See par	a 7.47			
661.2A				See par	a 7.47			
661.3A				See par	a 7.47			
661.4				See par	a /.4/			
662			3	see paras 7.4	7 and 12.23			
663.1					12.20			
664				See para	12.20			
665				See para	12.20			
666				See nars	12.20			
667			Se	e para 8 11 a	and Table 8-1	1		
667.1			Se	e para 8 11 a	and Table 8-1			
667.2	1		Se	e para 8.11 a	and Table 8-1	1		
668	1		Se	e para 8.11 a	and Table 8-1	1		
			50					

Diagram Number	Dimension	85th percentile speed of private cars (km/h)						
		Up to 30 31 to 50 51 to 60 61 to 80 81 to 100 Over 100						
668.1			Se	e para 8.11 a	and Table 8-1			
668.2			Se	e para 8.11 a	and Table 8-1			
670			See	Tables 14-1,	14-2 and 14	-4		
671			See	Tables 14-1,	14-2 and 14	-4		
672				See Tab	le 14-5			
673				See Tab	le 14-5			
674				One siz	e only			
675				One siz	e only			
801				See par	a 7.48			
804.1				See par	a 7.48			
804.2				See par	a 7.48			
804.3				See par	a 7.48			
804.4		Tho oi	zo of this sig	See para	a 7.48 d to troffic or	and (and No	to 9)	
010		THE SI	ze or triis sigi			1200		
811	Height	600	600 (800)	(1000)	(1200)	(1600)	-	
811 1	x-height	37.5	37.5 (50)	50 (62 5)	62 5 (75)	75 (100)		
818.2 (Note 9)	x-height	60	75	100	125	<u>150</u>	200	
818.3 (Note 9)	x-height	60	75	100	125	150	200	
818.4 (Note 9)	x-height	60	75	100	125	150	200	
057.4		Same size a	is associated	sign to diagr	am 650.1, 65	50.2 or 650.3	(see Note	
857.1				10)		(
877				See para	15.15			
878 (Note 9)	x-height	50	60	75	100	125	150 (200)	
879				See para	14.41			
880				One size	e only			
880.1				See para	a 14.45			
951		The si	ze of this sig	n is not relate	d to traffic sp	eed (see No	te 8)	
952 (Note 13)	Diameter	450	(450) 600	(600) 750	(750) 900	(900) 1200-	1200-	
953	Diameter-	(450) 600-	(600) 750	750-	(750) 900	-	-	
953.1-	Diameter-	As diagram 953, but see para 16.5						
953.2	x-height-	(50) 62.5-	(62.5) 75	75-	(75) 100	-	-	
954 (Note 11)	x-height	(37.5) 50	(50) 62.5	(62.5) 75	(75) 100	-	-	
954.2 (Note 11)	x-height	(37.5) 50	(50) 62.5	(62.5) 75	(75) 100	See Note 13-	See Note 13-	
954.3	x-height	(37.5) 50	(50) 62.5	(62.5) 75	(75) 100	-	-	
954.4 (Note 14)	x-height	(37.5) 50	(50) 62.5	(62.5) 75	(75) 100	-	-	
954.5				One size	e only			
954.6				One siz	e only			
954.7				One size	e only			
955				See para	17.34			
956				See para	17.34			
957				See para	17.34			
958				See para	15.14			
958.1		See para 17.8						
959				See para	15.14			
959.1				See par	a 17.8			
960				See para	15.22			
960.1				See para	17.18			
961			S	ee paras 15.	14 and 17.8			
962			S	ee paras 15.1	17 and 15.25			
962.1				See para	17.10			
962.2	L			See para	15.25			

Diagram Number	Dimension	85th percentile speed of private cars (km/h)					
		Up to 30 31 to 50 51 to 60 61 to 80 81 to 100 6					Over 100
963		•	•	See para	15.28	•	
963.1				See para	17.23		
963.2				See para	15.28		
963.3				See para	16.11		
964				See para	15.14		
965				See para	17.36		
966				See para	17.37		
967				See para	17.14		
968				One size	e only		
968.1				One size	e only		
969				See para	a 7.48		
974				See par	a 9.24		
975				See par	a 9.24		
976		Se	ek advice fro	om Her Majes	ty's Railway	Inspectorate	-
2002			See	e Local Trans	port Note 1/9	94	
2003			To be mo	dfied for blue	background	colours	
2010 1		See Local Transport Note 1/94					
2010.1		To be modfied for blue background colours					
2010.2			See	e Local Trans	port Note 1/9	94	
2010.2		To be modfied for blue background colours					
2123			See	e Local Trans	port Note 1/9	94	
			To be mo	dfied for blue	background	colours	
2124			See	e Local Trans	port Note 1/9	94	
		To be modfied for blue background colours					
2602.3				See Table 17	7-1, ISM3		
2713.1				See Table 9	<u>-1, ISM3</u>		
2805			See	e Local Trans	port Note 1/9	94	
2806		See Local Transport Note 1/94					
2806.1			See	e Local Trans	port Note 1/9	94	1 = 0
5010 (Note 9)	x-height	-	75	100	125	150	<u>150</u>
5011 (Note 9)	x-height	75	75	100	125	150	<u>150</u>
5012 (Note 9)	x-height	-	75	100	125	<u>150</u>	<u>150</u>
5013 (Note 9)	x-height	75	75	100	125	150	150
5014 (Note 9)	x-height	75	75	100	125	150	150
5015 (Note 9)	x-height	-	75	100	125	150	150
7032		See para 14.35 ; Amend to km/h					

NOTES

NOTE 1: 85th percentile speed measurement is dealt with in ADT MCRW, Volume 5. It should be noted that other factors such as carriageway width and the complexity of the background against which the sign is placed may also affect sign size (see notes 2 and 3 below).

NOTE 2: The smaller bracketed sign sizes should be used only where special amenity considerations or physical constraints apply. It should be borne in mind that smaller signs are likely to be seen later, and do not become legible until drivers are closer to them, with less time to react.

NOTE 3: The larger bracketed sign sizes should be used where site conditions require increased conspicuity, such as on a wide road or where the accident record calls for greater emphasis.

NOTE 4: The size of a sign and its corresponding supplementary plate should be taken from the same column. Where two sizes are shown for both the sign and the plate, corresponding sizes (smaller or larger) should be used.

NOTE 5: Smaller sizes, for use in bollards are not shown.

NOTE 6: Smaller sizes, for use in bollards are not shown.

NOTE 7: This sign is normally used only where the speed limit is 30 mph or less (see UK TSM3, para 4.22).

NOTE 8: The sizes of signs to diagrams 622.5, 622.6, 625.1, 810 and 951 are related to site conditions and not to the speed of traffic. Generally, the unbracketed size shown alongside the diagram should be used. The smaller size for diagrams 622.5 and 622.6 may be appropriate where amenity considerations or physical constraints apply. The larger sizes for diagrams 810 and 951 should be used where there is a need to increase conspicuity, or, in the case of diagram 810, where the sign is mounted on the opposite side of the road.

NOTE 9: These signs have a range of x-heights shown as minimum and maximum. The sizes shown in the table are those appropriate for a particular traffic speed. However, intermediate sizes may be used, especially where the traffic speed is in the middle of the range for a specific column. The maximum x-height of 250 mm for the sign to diagram 878 is not shown as this size is unlikely to be used.

NOTE 10: The smallest size (20 mm x-height) is likely to be appropriate when the sign faces the footway (see UK TSM3, para 6.16).

NOTE 11: Where the "no entry" sign to diagram 616 is used with a supplementary plate to diagram 954 or 954.2, see UK TSM3, para 15.22. Where the "no entry" sign is used in connection with a contra-flow cycle lane, see UK TSM, para 17.19.

NOTE 12: Where the sign to diagram 619 is used in connection with an advisory contra-flow cycle lane, see UK TSM3, para 17.27.

NOTE 13: Where an "Except local buses" supplementary plate is required with a 1200 mm diameter sign to diagram 952, this should be a variant of diagram 620, with an x-height of 125 mm.

NOTE 14: The appropriate x-height of diagram 954.4 when used with the "no through road" sign to diagram 816.

Height of diagram 816	x-height of diagram 954.4				
(mm)	(mm)				
400	37.5				
480	50				
560	62.5				

Annex 2: UK Transport Medium Alphabet



Annex 2: UK Transport Medium Alphabet



Annex 2: UK Transport Medium Alphabet



		Advance Di	Direction Signs			
85 th percentile speeds of private cars (km/h)	x-height (mm)	Minimum clear visibility distance (m)	<u>One sign</u> Distance from junction (m)	<u>Two Signs</u> Distance between 1 st and 2 nd sign (m)	x-height (mm)	Minimum clear visibility distance (m)
Up to 30	75 (60)	45 (35)	20		60 (50)	35 (30)
31 to 50	100 (75)	60 (45)	45	45	75 (60)	45 (35)
51 to 60	125 (100)	75 (60)	90	50	100 (75)	60 (45)
61 to 80	150 (125)	105	90-150	70	125 (100) (150)	75 (60) (105)

Annex 3: Directional Signs - "x-heights" and Siting Distances¹

Note 1

Not used

Note 2

The smaller "x-heights" shown in brackets are the minimum letter sizes to be used where site space is limited or there are special amenity considerations. As "x-heights" are variable, intermediate sizes, generally to the nearest 5mm, may be used. The aim should be to provide the largest "x-height" possible for a particular site. Where an intermediate "x-height" is used the minimum clear visibility distance may be interpolated if necessary (see Note 3). Where two advance direction signs are provided they should normally be in the same "x-height".

Note 3

The clear visibility distances indicated are minimum values. Greater distances should be provided wherever possible.

¹ See UK LTN 1/94, Appendix A

Note 4

For speed between 61 to 80 km/h the larger bracketed sizes are for direction signs located on the noses of diverging lanes.

Note 5

Not used

Note 6

The dimensions in this table apply to all types of legend.

Note 7

In the "One Sign" and "Two Sign" Advance Sign the distances shown are for guidance only and are not to be taken as being precise. In certain circumstances where one or more signs are provided it may be appropriate to increase the distances given; e.g. on an urban road where the advance direction sign shows destinations associated with dedicated lanes that commence well before the junction. Where two signs are provided, the second sign should be sited in accordance with the "One Sign" column.

Note 8

Where two junctions are closer together than the siting distance plus visibility distance they should generally be signed as one junction.

Annex 4a: Placement of Characters on Virtual "Tiles" as in UK TSM7, Figure 2-1





Descender

These characters

are classed as

having descenders

Tile

width

1 sw



Annex 4b: Horizontal Spacing of Sign Elements as in UK TSM3, Figure 2-2

2



Annex 4c: Abbreviated Place-names and Spacings





 \odot

լգլգ

M

 \odot Ŋ

Special spacing which applies when an apostrophe is followed by lower case letters "b", "h", "k", or "l"

Figure 2-3

Annex 4D: Tile (Virtual) Widths

APPENDIX C Width of alphabet tiles

Table 1: Tile widths for Transport Medium alphabet

The widths are given in stroke widths (1/4 of the x-height)

Upp	er case	Low	er case	Nur	merals			Punc	tuatio	n marks etc
А	5.44	а	4.44	1	3.16			8	5.04	
в	5.88	ь	4.68	2	4.80			(4.20	
С	5.92	с	4.12	3	5.08)	4.20	
D	6.16	d	4.76	4	5.28			?	5.52	
Е	5.28	e	4.36	5	4.88				2.12	full stop
F	4.76	f	3.00	6	5.04				2.12	raised point
G	6.20	g	4.56	7	4.16			:	2.12	colon
н	6.40	h	4.48	8	5.20			,	2.60	comma
L	2.92	i	2.16	9	5.12			•	1.56	apostrophe
J	3.72	j	2.32	0	5.32			-	2.64	hyphen
К	5.52	k	4.32					'-	3.40	feet
L	4.28	I.	2.48	1/4	4.92			·	3.68	inches
м	7.36	m	6.56	1/2	5.28			/	3.12	(lower case)
N	6.72	n	4.48	3/4	5.92			/	3.12	(upper case)
0	6.24	0	4.72	1/3	5.16			£	5.36	
Р	5.20	Р	4.72	2/3	6.60			%	6.40	
Q	6.32	q	4.72							
R	5.64	r	3.20							
S	5.48	s	3.88	UPF	PER CASE	widt	hs when	follov	wed by	/
т	4.36	t	3.24	low	ver case a,	e, g	o, r, or i	u (-		
U	6.16	u	4.60							
v	5.20	v	3.92	т	3.92;	v	4.52;	Υ	4.44	
w	7.32	w	5.88							
х	5.12	х	4.16							
Υ	4.92	У	3.92	UPF	PER CASE	W is	7.56 wid	le wh	en	
Ζ	4.76	z	3.88	foll	owed by (uppe	r case T, V	V, X,	Y or Z	