

Nursery stock —

Part 1: Specification for trees and shrubs

Committees responsible for this British Standard

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Arboricultural Association
 Association for Consumer Research (ACRE)
 Association of County Councils
 Association of District Councils
 British Association of Landscape Industries
 Bulb Distributors' Association
 Department of Transport
 Forestry Commission
 Horticultural Trades Association
 Institute of Chartered Foresters
 Institute of Leisure and Amenity Management
 Joint Hardy Nursery Stock Committee
 Landscape Institute
 Ministry of Agriculture, Fisheries and Food
 National Farmers' Union
 Rose Growers' Association
 Royal National Rose Society
 Scottish Office (Agriculture and Fisheries Department)
 Timber Growers United Kingdom
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Foreword

This Part of BS 3936 has been prepared under the direction of the Agriculture and Food Standards Policy Committee. It is a revision of BS 3936-1:1980 which is withdrawn. This revision covers the requirements of buyers and users of all trees and shrubs more fully so that the quality of plants may be improved. Grouping into conifers and other trees or shrubs is discontinued. It is intended that all interests from initial grower to final buyer are covered but it is not intended that all aspects necessary for contracts are included.

It is emphasized that all the information in Appendix A is given solely to illustrate good trade practice.

It has been assumed in the drafting of this British Standard that the execution of its provisions is entrusted to appropriately qualified and experienced people.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 20, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of BS 3936 specifies requirements for trees and shrubs, including conifers and woody climbing plants, that are suitable for transplanting and growth as ornamental or amenity plants (either individually or massed) but not specifically for timber production (see BS 3936-4). It includes requirements for compost in a container, if used, and for labelling.

It does not apply to roses (see BS 3936-2) or to poplars and willows (see BS 3936-5). Some shrubs are suitable for use as ground cover plants (see BS 3936-10). Selected examples of plants are given in Appendix A with appropriate information.

NOTE 1 These examples, which include poplars and willows, are supplied for information only.

NOTE 2 The titles of the publications referred to in this Part of BS 3936 are listed on the inside back cover.

2 Definitions

For the purposes of this Part of BS 3936, the following definitions apply.

2.1

tree

a woody perennial with a distinct stem or distinct stems

2.2

shrub

a woody perennial, usually less tall than a tree, with several stems or side branches and of a bushy habit

2.3

climber

a woody perennial requiring a support on which to climb using tendrils, aerial roots or twining shoots or leaf stalks

2.4

conifer

a tree or shrub of the order *Coniferales*, *Taxales* or *Ginkgoales*

2.5

container-grown plants

plants that have been grown in any type of container (e.g. pot, plastics bag, peat block) for sufficient time for root growth to have substantially filled the container, but that are not root bound

NOTE 1 The size of the container should be in proportion to the size of the plant.

NOTE 2 Examples of species which are usually container grown are given in Appendix A for information only.

2.6

containerized plants

plants in containers that have not been in the container long enough to have made substantial new root growth

2.7

bare root plant

a plant, the root system of which has been grown in the ground and that on transplanting does not require soil to be attached

NOTE Most deciduous trees and shrubs come into this category.

2.8

root-balled plant

a plant, the root system of which has been grown in the ground and that on transplanting requires soil to be firmly attached and supported with a suitable porous material such as hessian

NOTE Most evergreen trees, shrubs and conifers come into this category.

2.9

root wrapped

a term applied to a plant, the root system of which is enclosed to avoid drying out

NOTE This applies to bare root subjects only.

2.10

country of origin

the country where the plant has grown for the latter half of the most recent growing season

3 Root system

3.1 The root system shall be alive and healthy, balanced in relation to the whole plant and in a condition conducive to successful transplanting and establishment. Plants other than seedlings shall have been regularly transplanted, potted-on or undercut.

3.2 The root systems of all plants shall be of one or more of the following forms: bare root, root wrapped, root-balled, container-grown (pot-grown) or containerized. All bare root trees with stems of 14 cm girth and above shall be either root wrapped or root-balled.

NOTE Examples of species which are usually supplied root-balled or container-grown are given in Appendix A for information only.

4 Condition

4.1 When inspected visually, plants shall be alive, free from obvious pests and diseases and shall not be mechanically damaged or show signs of nutrient deficiency or toxicity.

4.2 Plants shall have been hardened off, that is, able to withstand normal weather conditions in the eventual planting positions without special protection beyond that accorded regularly to the species.

4.3 The root ball and the compost in a container shall be visibly free from perennial weeds.

4.4 Plants shall have been protected from mechanical damage and adverse conditions such as waterlogging, frost, heat, exposure to drying winds or unsuitable storage conditions. If packaged, the packaging shall protect the plants, especially from mechanical damage and drying out.

5 Dimensions

5.1 All plants (and containers, if used) shall be supplied in the sizes specified in Table 1.

NOTE The sizes of containers are the diameter in centimetres up to 1 L capacity and the volume in litres of 1 L capacity and above.

5.2 Spreading or prostrate plants shall be measured by the mean diameter of spread.

6 Labelling and additional information

6.1 General

Each plant or group of plants of a single species or cultivar shall be legibly labelled or otherwise identified.

6.2 Information required

6.2.1 The following information shall be stated on the label.

- a) The name(s) of the plants.

NOTE The name of a plant should be the botanical name, i.e. genus and species with variety or cultivar if appropriate. The common name may be given if there is no uncertainty.

- b) The name of the supplier, unless the plants are sold expressly for resale.

6.2.2 The following information shall also be provided.

- a) The size of the plants and/or the size of container (except for retail sale) (see Table 1 and Appendix A).
- b) The age, in years, and root system of seedlings/cuttings and transplants indicated as in note 2 to 7.7.
- c) If the plants are containerized.
- d) The number of this British Standard, i.e. BS 3936-1:1992¹⁾.

- e) A statement as to whether or not the country of origin is the UK.

6.2.3 The supplier shall give the following information on request.

NOTE This information may be included on the label or other means of identification

- a) The country of origin.
- b) The method of propagation, e.g. from cuttings, from seeds, by micropropagation, by grafting/budding.
- c) The name or designation of the rootstock of budded or grafted plants.
- d) The type of container, e.g. polybag, rigid plastic, round or square shaped.

7 Forms of trees

NOTE See Figure 1 for outline diagrams of examples and Table 1 for dimensions.

7.1 Standards

7.1.1 Standards shall have clear, substantially straight stems. Grafted and budded trees shall have no more than a slight bend at the union.

7.1.2 The head shall be developed for its type and evenly balanced, with no main branch crossing the crown. Standards shall have a central leader or a branch head according to species or cultivar.

7.1.3 Standards shall be designated as half, extra light, light, standard, selected, heavy or extra heavy. The associated dimensions shall be as stated in Table 1.

7.2 Feathered trees

7.2.1 A feathered tree shall have a defined, upright central leader and a stem furnished with evenly spread and balanced lateral shoots down to near ground level, according to its species.

7.2.2 Feathered trees shall be designated according to the dimensions in Table 1.

NOTE The description feathered standard is considered to be a contradiction in terms and its use is deprecated.

7.3 Whips

7.3.1 A whip shall be without significant feather growth, as determined by visual inspection.

7.3.2 Whips shall be supplied in the dimensions given in Table 1.

¹⁾ Marking BS 3936-1:1992 on or in relation to a product represents a manufacturer's declaration of conformity, i.e. a claim by or on behalf of the manufacturer that the product meets the requirements of the standard. The accuracy of the claim is therefore solely the responsibility of the person making the claim. Such a declaration is not to be confused with third party certification of conformity, which may also be desirable.

Table 1 — Dimensions of trees

Form	Girth (stem circumference) 1 m from ground	Overall height from the ground (other than top worked weeping standards)	Clear stem height from ground to lowest branch	Container size (if used)
Seedlings, cuttings and transplants	cm	cm 10 to 15 15 to 20 20 to 25 25 to 30 30 to 40 40 to 50 50 to 60 60 to 80 80 to 100 100 to 125 or any combinations of above according to species and age	cm — — — — — — — — —	L
Whips	— — — — —	100 to 125 125 to 150 150 to 175 175 to 200 over 200	— — — — —	
Feathered trees	— — — — 6 to 8 8 to 10 10 to 12	125 to 150 150 to 175 175 to 200 200 to 250 250 to 300 250 to 300 over 300	— — — — — — —	— — 10 10 15 15 15
Standard trees:				
Half	4 to 6	175 to 250	125 to 150	10
Extra light	4 to 6	200 to 250	150 to 175	15
Light	6 to 8	250 to 300	150 to 175	15
Standard	8 to 10	250 to 300	175 to 200	15
Selected	10 to 12	300 to 350	175 to 200	25
Heavy	12 to 14	350 min.	175 to 200	35
Extra heavy	14 to 16	350 min.	175 to 200	35

NOTE 1 The criteria normally used for tendering and ordering are:

for seedlings and transplants: age, treatment (see notes to 7.7) and overall height

for whips: overall height

for feathered trees: overall height

for standard trees: girth (stem circumference)

NOTE 2 The information given in this table differs from that given in BS 3936-4 and BS 3936-5.

7.4 Multistem trees

A multistem tree shall have two or more main stems originating at or near (above or below) ground level from one root system. If two or more root systems are grown together to form a multistem tree, this shall be indicated.

7.5 Seedlings

The age of seedlings (plants grown from seed and not transplanted) shall be specified when offered for sale and shall be expressed in accordance with note 2 to 7.7.

7.6 Cuttings

The age of cuttings (plants grown from shoots, stems or roots of a mother plant) shall be specified when offered for sale and shall be expressed in accordance with note 2 to 7.7.

7.7 Transplants and undercut seedlings/cuttings

The height of transplants (seedlings or cuttings that have been transplanted at least once) shall be stated (in cm). The number of growing seasons before and after transplanting or undercutting shall be expressed as shown in note 2. If the seedling/cutting has been undercut, it shall be described as an undercut seedling/cutting. (See also clause 6.)

NOTE 1 Undercutting is the severing of main roots of seedlings/cuttings in their seed or cutting bed at a suitable depth below the soil surface, thereby encouraging a fibrous root system without transplanting. Undercutting should be timed to allow root growth to take place prior to supply.

NOTE 2 Periods (in years) for different styles are given by + for transplanting and u for undercutting.

Examples

1 + 0	=	1 year old seedling
2 + 0	=	2 year old seedling
1 + 1	=	1 year in seed bed, 1 year transplanted (2 year old seedling)
1 + 2	=	1 year in seed bed, 2 years transplanted (3 year old seedling)
2 + 1	=	2 years in seed bed, 1 year transplanted (3 year old seedling)
1u1	=	2 years in seedbed, undercut after 1 year (2 year old seedling)
2u2	=	4 years in seedbed, undercut after 2 years (4 year old seedling)
0 + 1	=	1 year old cutting
0 + 2	=	2 year old cutting
0 + 1 + 1	=	1 year cutting bed, 1 year transplanted (2 year old seedling)
0 + 1 + 2	=	1 year cutting bed, 2 years transplanted (3 year old seedling)

8 Shrubs

NOTE See 2.2 for the definition of a shrub.

8.1 A shrub shall be cut back or trimmed and grown to encourage bushiness according to type.

8.2 Shrubs shall be sold according to their total height from the ground, their spread or the size of containers, as applicable.

NOTE 1 For shrubs sold as seedlings, the information given in Table 1 applies.

NOTE 2 Other relevant information is given in Appendix A, for example, the usual number of breaks (stems or branches) in the lower third.

9 Climbing plants

NOTE See 2.3 for the definition of a climber.

9.1 Unless grown as ground cover, climbing plants shall be supported and tied.

9.2 Climbing plants shall be sold according to their total heights from the ground or the container sizes.

NOTE Other relevant information is given in Appendix A, for example, the usual number of breaks (stems or branches) in the lower third.

10 Conifers

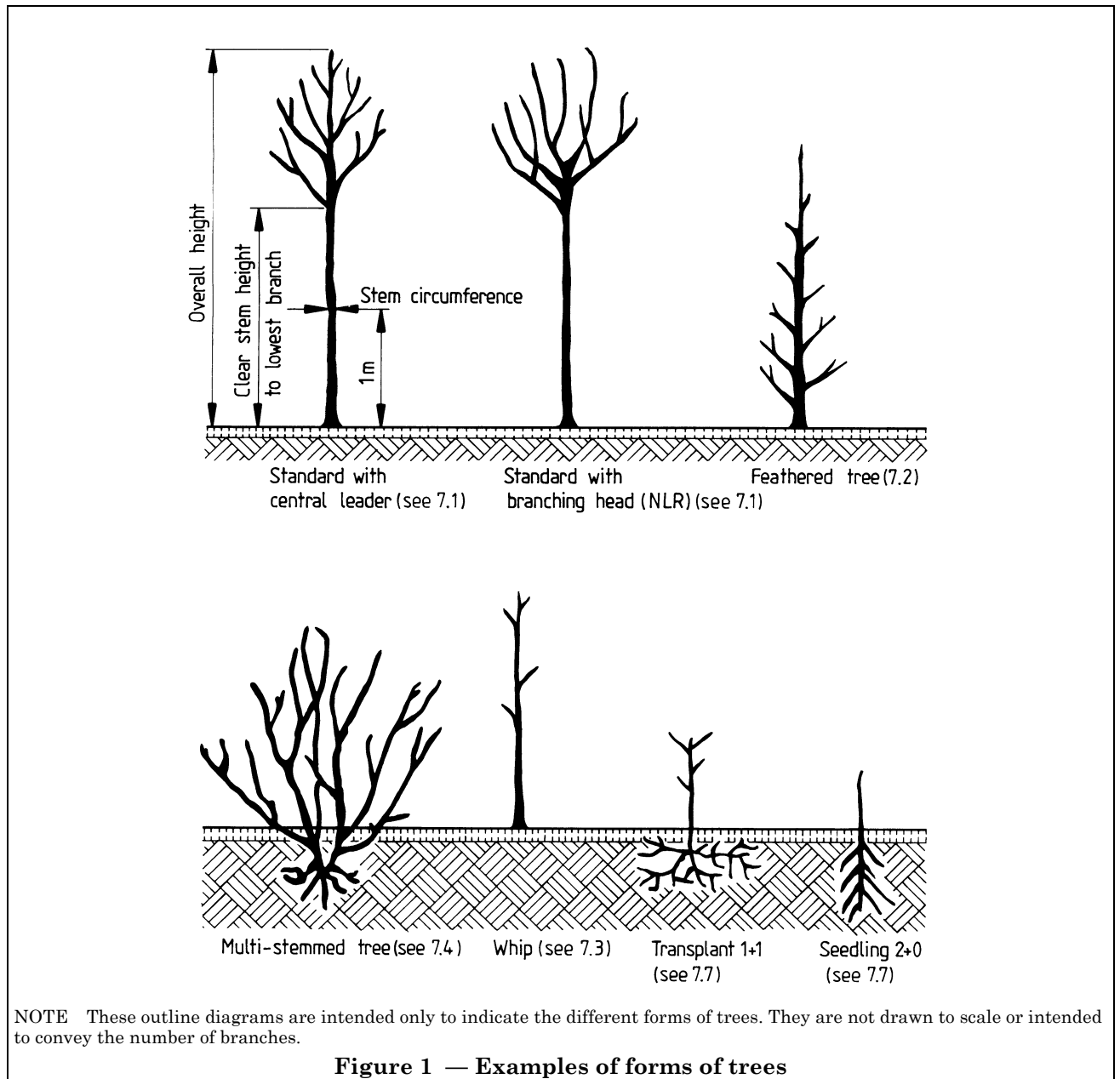
NOTE See 2.4 for the definition of a conifer.

10.1 Conifers shall be well furnished with growth according to species.

10.2 Conifers shall be sold according to their height or spread, as applicable.

NOTE 1 For conifers sold as seedlings, the information given in Table 1 applies.

NOTE 2 Other relevant information is given in Appendix A, for example, the usual number of breaks (stem or branches) in the lower third.



Appendix A Examples of plants

Table 2 to Table 5 are included for information, showing varieties of different rates of growth if appropriate.

Key

S	=	seedlings, cuttings and transplants
W	=	whip
F	=	feathered tree
HST	=	half standard
ELS	=	extra light standard
LS	=	light standard
St	=	standard
SEL	=	selected standard

H	=	heavy standard
EH	=	extra heavy standard
NLR	=	no leader required
P	=	prostrate
RB	=	root balled
BR	=	bare root
C	=	needs cane support
RW	=	root wrapped

* spread not height

If the comment shows pruned, plants are likely to be below minimum height during the months specified.

Table 2 — Examples of climbing plants

	Minimum height above soil/media level	Minimum container size	Minimum number of breaks	Alternative root packaging to containers	Comments
	cm	L			
Actinidia kolomikta	40	1.5	2		C
Campsis tagliabuana "Madame Galen"	60	1.5	2		C
Clematis "Jackmanii Superba"	60	1.5	2		C
Hedera colchica "Dentata Variegata"	60	1.5	2		C
Hedera helix "Gold Heart"	40	1.5	2		C
Hydrangea petiolaris	30	1.5	2	RB	C
Jasminum officinale	60	1.5	2		C
Lonicera periclymenum "Serotina"	60	1.5	2		C
Parthenocissus tricuspidata "Veitchii"	60	1.5	2		C
Passiflora caerulea	60	1.5	2		C
Polygonum baldschuanicum	60	1.5	2		C
Solanum crispum "Glasnevin"	100	3	1		C
Vitis coignetiae	50	1.5	1		C
Wisteria sinensis	100	3	1		C

Table 3 — Examples of conifers

	Minimum height above soil/media level	Minimum container size	Minimum number of breaks	Alternative root packaging to containers	Comments
	cm	L			
<i>Abies grandis</i>	30	2	—	RB	
<i>Cedrus deodara</i>	50	3	—	RB	
<i>Cedrus libani</i>	40	3	—	RB	
<i>Chamaecyparis lawsoniana</i> "Columnaris"	40	3	—	RB	
<i>Chamaecyparis lawsoniana</i> "Ellwoodii"	20	2	—	RB	
<i>Chamaecyparis lawsoniana</i> "Minima aurea"	8	1.5	—	RB	
<i>Chamaecyparis obtusa</i> "Nana Gracilis"	8	1.5	—	RB	
<i>Cryptomeria japonica</i> "Elegans Compacta"	40	3	—	RB	
x <i>Cupressocyparis leylandii</i>	50	2	—		
x <i>Cupressocyparis leylandii</i> "Castlewellan"	40	2	—		
<i>Ginkgo biloba</i>	60	2	—	RB	
<i>Juniperus horizontalis</i>	20*	2	3	RB	P
<i>Juniperus x media</i> "Pfitzerana"	30*	2	3	RB	P
<i>Juniperus sabina tamariscifolia</i>	20*	2	3	RB	P
<i>Juniperus squamata</i> "Blue Star"	12	1.5	—	RB	
<i>Juniperus virginiana</i> "Skyrocket"	40	2	—	RB	
<i>Larix kaempferi</i>	50	2	—	RB	Note 2
<i>Metasequoia glyptostroboides</i>	50	3	—	RB	
<i>Picea abies</i>	30	2	—	RB	Note 1
<i>Picea glauca albertiana</i> "Conica"	15	1.5	—	RB	
<i>Picea pungens</i> "Koster"	30	3	—	RB	
<i>Pinus sylvestris</i>	30	2	—	RB	Note 1
<i>Pinus mugo</i>	15	2	—	RB	
<i>Sequoia sempervirens</i>	50	3	—		
<i>Sequoiadendron gigantea</i>	30	3	—		
<i>Taxodium distichum</i>	50	3	—	RB	
<i>Taxus baccata</i>	30	2	—	RB	
<i>Thuja occidentalis</i> "Rheingold"	20	2	—	RB	
<i>Thuja plicata</i>	50	2	—	RB	Note 1
<i>Tsuga heterophylla</i>	50	3	—	RB	Note 2
NOTE 1 Also available as seedlings, cuttings or transplants of height 15 cm for mass planting.					
NOTE 2 Also available as seedlings, cuttings or transplants of height 30 cm for mass planting.					

Table 4 — Examples of trees

	Form	Minimum height above soil/media level	Minimum number of branches	Alternative root packaging to containers	Comments
Acer campestre	S	30			
	F	125			
	LS	250	4		
	St	250	4		
	SEL	300	4		
	H	350	6		
	EH	350	6		RW
Acer griseum	S	50			
	W	100			RB
Acer capillipes (snakebark)	W	125			
	F	175			
	HST	175	4		NLR
	ELS	200	4		NLR
	St	250	4		NLR
Acer negundo "Elegans", and other Vars. and CVS.	W	100			
	F	100			
	HST	175	4		NLR
	ELS	200	4		NLR
	LS	250	4		NLR
Acer platanoides, A. pseudoplatanus	St	250	4		NLR
	S	30			
	W	125			
	LS	200	4		
	St	250	4		
	SEL	300	4		
	H	350	6		
Acer platanoides "Crimson King"	EH	350	6		RW
	W	150			
	LS	200	4		
	St	250	4		
	SEL	300	4		
	H	350	6		
	EH	350	6		RW
Acer pseudoplatanus "Brilliantissimum"	HST	175	4		NLR
	LS	250	4		NLR
Aesculus hippocastanum	S	15			
	W	100			
	St	250	4		
	SEL	300	4		
	H	350	6		
	EH	350	6		RW

NOTE All standard trees of 14 cm and above should be root wrapped, unless balled. All trees below 14 cm are bare root unless otherwise stated.

Table 4 — Examples of trees

	Form	Minimum height above soil/media level	Minimum number of branches	Alternative root packaging to containers	Comments
		cm			
Aesculus hippocastanum "Baumannii"	W	100			
	St	250	4		
	SEL	300	4		
	H	350	4		
	EH	350	6	RW	
Ailanthus altissima	W	150			
	St	250			
	SEL	300			
	H	350	3		
	EH	350	3	RW	
Alnus glutinosa	S	20			
	F	125			
	LS	250	4		
	St	250	5		
	SEL	300	5		
	H	350	7		
	EH	350	7	RW	
	W	125			
Amelanchier lamarckii	F	150			
	ELS	200	3		NLR
	LS	250	3		NLR
	St	250	3		NLR
	W	125			
Betula pendula	F	125	5		
	LS	250	5		
	St	250	5		
	SEL	300	5		
	H	350	7		
	EH	350	7	RW	
	F	125	5		
	LS	250	5		
Betula pendula "Tristis"	St	250	5		
	SEL	300	5		
	H	350	7		
	EH	350	7	RW	
	S	15			
	F	125			
	LS	250	3		
	St	250	3		
Carpinus betulus	SEL	300	5		
	H	350	5		
	EH	350	7	RW	
	S	15			
	F	125			
	LS	250	3		
	St	250	3		
	SEL	300	5		
Carpinus betulus "Fastigiata"	H	350	5		
	EH	350	7	RW	
NOTE All standard trees of 14 cm and above should be root wrapped, unless balled. All trees below 14 cm are bare root unless otherwise stated.					

Table 4 — Examples of trees

	Form	Minimum height above soil/media level	Minimum number of branches	Alternative root packaging to containers	Comments
Castanea sativa	S	30			
	W	100			
	F	175			
	LS	250	3		
	St	250	3		
	SEL	300	3		
	H	350	5		
	EH	350	5	RW	
Catalpa bignonioides	W	125			
	St	275	2		NLR
	SEL	300	2		NLR
Cotoneaster "Hybridus Pendulus"	H	350	3		NLR
	HST	175	3	RB	NLR
Crataegus monogyna	S	30			
	F	125			
	ELS	200	5		NLR
	LS	250	5		NLR
Crataegus oxycantha "Paul's Scarlet"	St	250	5		NLR
	W	125			
	F	150			
	LS	250	5		NLR
	St	250	5		NLR
Davidia involucrata	S	30		RB	
	W	100		RB	
Eucalyptus gunnii	S	60	3		3C
Fagus sylvatica	S	30			
	F	125			
	LS	250	3		
	St	250	3		
	SEL	300	5		
	H	350	5	RB	
	EH	350	5	RB	
Fagus sylvatica "Riversii"	F	125			
	LS	250	3		
	St	250	3		
	SEL	300	5		
	H	350	5	RB	
Fraxinus excelsior	EH	350	5	RB	
	S	30			
	W	125			
	LS	250	4		
	St	250	4		
	SEL	300	4		
Fraxinus excelsior	H	350	6		
	EH	350	6	RW	

NOTE All standard trees of 14 cm and above should be root wrapped, unless balled. All trees below 14 cm are bare root unless otherwise stated.

Table 4 — Examples of trees

	Form	Minimum height above soil/media level	Minimum number of branches	Alternative root packaging to containers	Comments
Fraxinus oxycarpa "Raywood"	W	150		RW	
	LS	250	4		
	St	250	4		
	SEL	300	4		
	H	350	6		
	EH	350	6		
Gleditsia triacanthos	S	30			
	F	125			
	LS	250	3		
	St	250	3		
Gleditsia triacanthos "Sunburst"	SEL	300	5		
	W	100			
	HST	175	3		
	ELS	200	3		
Juglans regia	LS	250	3		
	St	250	3		
	SEL	300	3		
	W	125			
Koelreuteria paniculata	LS	250	3		
	St	250	3		
	SEL	300	3		
	W	100			
Laburnum watereri "Vossii"	HST	175	3		
	ELS	200	3		
	LS	250	3		
	St	250	3		
Liquidambar styraciflua	W	100			
	HST	175			
	LS	250	4		
	St	250	4		
Liriodendron tulipifera	S	30		RW/RB	
	F	125			
	LS	250	3		
	St	250	5		
Malus floribunda	SEL	300	7	RW/RB	
	W	100			
	F	150			
	HST	175	3		
Liriodendron tulipifera	ELS	200	3	RW/RB	
	LS	250	3		
	St	250	5		
	SEL	300	5		
	H	350	7		
Malus floribunda	W	100		RW/RB	
	F	150			
	HST	175	3		
	ELS	200	3		
	LS	250	3		
Malus floribunda	St	250	5		
	SEL	300	7		
	W	100			
	F	150			
Malus floribunda	HST	175	3		
	ELS	200	3		
	LS	250	3		
	St	250	5		
	SEL	300	7		

NOTE All standard trees of 14 cm and above should be root wrapped, unless balled. All trees below 14 cm are bare root unless otherwise stated.

Table 4 — Examples of trees

	Form	Minimum height above soil/media level	Minimum number of branches	Alternative root packaging to containers	Comments
Malus tschonoskii	W	100			
	F	125			
	LS	250	3		
	St	250	3		
	SEL	300	5		
Nothofagus obliqua	S	30			
	F	125		RW/RB	
	LS	250	3	RW/RB	
	St	250	3	RW/RB	
Platanus x hispanica	SEL	300	5	RW/RB	
	S	30			
	W	100			
	F	125			
Populus alba	LS	250	3		
	St	250	3		
	SEL	300	3		
	H	350	5		
	EH	350	7	RW	
	S	60			
	W	100			
Populus nigra "Italica"	F	150			
	LS	250	3		
	St	250	3		
	SEL	300	5		
	H	350	5		
	S	60			
Prunus avium	F	125			
	S	30			
	W	100			
	F	175			
	LS	250	3		
	St	250	3		
	SEL	300	5		
Prunus avium "Plena"	H	350	7		
	EH	350	7	RW	
	F	175			
	LS	250	3		
	St	250	3		
	SEL	300	5		
	H	350	7		
	EH	350	7	RW	

NOTE All standard trees of 14 cm and above should be root wrapped, unless balled. All trees below 14 cm are bare root unless otherwise stated.

Table 4 — Examples of trees

	Form	Minimum height above soil/media level	Minimum number of branches	Alternative root packaging to containers	Comments
Prunus cerasifera "Nigra"	W	100			
	F	150			
	HST	175	3		NLR
	ELS	200	3		NLR
	LS	250	3		NLR
	St	250	5		NLR
Prunus "Kanzan"	W	100			
	HST	175	3		NLR
	LS	250	3		NLR
	St	250	3		NLR
	SEL	300	5		NLR
Prunus "Kiku Shidare Sakura"	H	350	5		NLR
	W	100			
	HST	175	3		NLR
	LS	250	3		NLR
Prunus subhirtella "Autumnalis"	St	250	3		NLR
	W	100			
	F	150			
	HST	175	3		NLR
Pyrus calleryana "Chanticleer"	ELS	200	3		NLR
	LS	250	5		NLR
	St	250	5		NLR
	W	100			
	F	150			
	LS	250	3		
Pyrus salicifolia "Pendula"	St	250	3		
	SEL	300	5		
	H	350	7		
	W	100			
	F	125			
Quercus robur	HST	175	3		NLR
	LS	250	3		NLR
	St	250	3		NLR
	S	20			
Quercus robur	W	100			
	F	125			
	ELS	200	3		
	LS	250	3		
	St	250	3		
	SEL	300	3		
	H	350	5		RB

NOTE All standard trees of 14 cm and above should be root wrapped, unless balled. All trees below 14 cm are bare root unless otherwise stated.

Table 4 — Examples of trees

	Form	Minimum height above soil/media level	Minimum number of branches	Alternative root packaging to containers	Comments
Robinia pseudoacacia	S	30	3		
	W	100			
	LS	250	3		NLR
	St	250	3		NLR
	SEL	300	3		NLR
	H	350	5		NLR
Robinia pseudoacacia "Frisia"	W	125			
	ELS	200	3		NLR
	LS	250	3		NLR
	St	250	3		NLR
Salix alba	S	60			
	W	100			
	F	150			
	LS	250	3		
	St	250	3		
	SEL	300	5		
	H	350	7		
Salix caprea "Kilmarnock"	HST	175	3		NLR
	LS	250	3		NLR
Salix x chrysocoma	F	150			
	LS	250			NLR
	St	250			NLR
	SEL	300			NLR
	H	350			NLR
Sorbus aria "Lutescens"	W	100			
	F	150			
	LS	250	3		
	St	250	3		
	SEL	300	5		
	H	350	7		
	EH	350	7		
Sorbus aucuparia	S	30			
	W	100			
	F	150			
	LS	250	3		NLR
	St	250	3		NLR
	SEL	300	5		NLR
	H	350	5		NLR
	EH	350	7		NLR
				RW	
				RW	

NOTE All standard trees of 14 cm and above should be root wrapped, unless balled. All trees below 14 cm are bare root unless otherwise stated.

Table 4 — Examples of trees

	Form	Minimum height above soil/media level	Minimum number of branches	Alternative root packaging to containers	Comments
		cm			
Sorbus "Embley"	F	150			
	LS	250	3		NLR
	St	250	3		NLR
	SEL	300	5		NLR
	H	350	5		NLR
	EH	350	7		NLR
Sorbus torminalis	S	30		RW	
	W	100			
Tilia cordata	S	30			
	W	100			
	F	125			
	LS	250	3		
	St	250	3		
	SEL	300	5		
	H	350	5		
	EH	350	7		RW
Tilia x euchlora	W	100			
	F	150			
	LS	250	3		
	St	250	3		
	SEL	300	5		
	H	350	5		
	EH	350	7		RW
NOTE All standard trees of 14 cm and above should be root wrapped, unless balled. All trees below 14 cm are bare root unless otherwise stated.					

Table 5 — Examples of shrubs

	Minimum height above soil/media level	Minimum container size	Minimum breaks	Alternative root packaging to containers	Comments
		L			
Abelia grandiflora	25	2	3		
Abutilon megapotamicum	50	1.5	2		C
Acer japonica "Aureum"	20	3	1f	RB	
Acer palmatum "Atropurpureum"	50	3	2	RB	
Acer palmatum "Dissectum"	30	3	2	RB	
Amelanchier canadensis	50	2	3	BR	
Aralia elata	40	3	1	RB	
Arbutus unedo	30	3	3	RB	
Artemisia "Powis Castle"	20	2	3		
Arundinaria murielae	50	3	3	RB	
Arundinaria pygmaea	15	2	3	RB	
Aucuba japonica "Crotonifolia"	30	2	3	RB	
Aucuba japonica "Nana Rotundifolia"	20	2	3	RB	
Berberis darwinii	25	2	3		
Berberis julianae	25	2	3	RB	
Berberis x stenophylla	40	2	3	RB	
Berberis thunbergii	30	2	3	BR	
Berberis thunbergii "Atropurpurea Nana"	15 ^a	2	3	RB	
Berberis thunbergii "Rose Glow"	25	2	3	BR	
Buddleia davidii "Royal Red"	50	2	3		
Buxus sempervirens	25	2	3	RB	
Buxus sempervirens "Suffruticosa"	10	1	3	RB, BR	
Calluna vulgaris "H.E. Beale"	5	(7 cm)	3	RB	
	10	1	3	RB	
Camellia williamsii "Donation"	40	2	2	RB	
Caryopteris clandonensis "Arthur Simmonds"	25	2	3		Pruned Mar/Apr
Ceanothus "Gloire de Versailles"	40	2	3		
Ceanothus impressus "Puget Blue"	50	2	1f		C
Ceanothus thyrsiflorus repens	30 ^a	2	3		
Ceratostigma willmottianum	20	2	3		Pruned Mar/Apr
Cercis siliquastrum	40	3	3	RB	
Chaenomeles x superba "Crimson and Gold"	40	2	2		
Choisya ternata	25	3	3		
Choisya ternata "Sundance"	15	2	3		
Cistus x corbariensis	25	2	3		
Colutea arborescens	50	2	3	BR	
Convolvulus cneorum	15	1.5	3		
Cornus alba	50	2	3	BR	Note
Cornus alba "Elegantissima"	40	2	3	BR	
Cornus canadensis	8 ^a	(9 cm)	3		

NOTE Available as seedlings, cuttings or transplants of height 30 cm for mass planting.

Table 5 — Examples of shrubs

	Minimum height above soil/media level	Minimum container size	Minimum breaks	Alternative root packaging to containers	Comments
		L			
Cornus kousa	40	3	3	RB	Note
Corylopsis pauciflora	25	2	3	RB	
Corylus avellana	50	2	3	BR	
Cotinus coggygria "Royal Purple"	30	2	3	BR	
Cotoneaster "Coral Beauty"	20	1.5	3		
Cotoneaster "Cornubia"	60	3	2	RB	
Cotoneaster dammeri	15 ^a	1.5	3		
Cotoneaster simonii	50	2	3	BR	
Cytisus "Burkwoodii"	40	2	3		
Cytisus x kewensis	20 ^a	2	3		
Cytisus x praecox	30	2	5		
Daphne cneorum	10 ^a	1	2	RB	
Daphne mezereum	25	2	2	RB	
Deutzia "Mont Rose"	40	2	3	BR	
Deutzia "gracilis"	30	2	3	BR	
Elaeagnus x ebbingei	40	2	2		
Elaeagnus pungens "Maculata"	30	2	3		
Erica carnea "Springwood pink"	8	(7 cm)	3	RB	
	10	1	3	RB	
Escallonia "Apple Blossom"	30	2	3		
Euonymus alatus	30	2	3	RB	
Euonymus europaeus "Red Cascade"	50	2	3	BR	
Euonymus fortunei "Emerald and Gold"	15 ^a	1	3		
Euonymus japonicus	30	2	3	RB	
x Fatsyhedera lizei	40	2	1		
Fatsia japonica	30	2	1		
Forsythia "Lynwood"	40	2	3	BR	
Fremontodendron "California Glory"	40	2	1f		
Fuchsia "Riccartonii"	20	2	3		
					C Pruned Mar/Apr
Garrya elliptica (male form)	30	2	2		
Gaultheria procumbens	5 ^a	(9 cm)	3	RB	
Gaultheria shallon	15	1	3	RB	
Genista lydia	20 ^a	1.5	4		
Genista hispanica	15	1.5	4		
Griselinia littoralis	30	2	3	RB	
Hamamelis mollis	40	3	2	RB	
Hebe "Autumn Glory"	25	2	3		
Hebe pinguifolia "Pagei"	15 ^a	1.5	3		
Hibiscus syriacus "Blue Bird"	30	3	3	BR	
Hippophae rhamnoides	40	2	3	BR	
Hydrangea "Altona" (Hortensia)	25	3	3	RB	
Hydrangea paniculata "Grandiflora"	40	3	3	BR	

NOTE Available as seedlings, cuttings or transplants of height 30 cm for mass planting.

Table 5 — Examples of shrubs

	Minimum height above soil/media level	Minimum container size	Minimum breaks	Alternative root packaging to containers	Comments
		L			
<i>Hydrangea aspera</i> subsp. <i>aspera</i> (syn. <i>villosa</i>)	25	2	3	RB	
<i>Hypericum calycinum</i>	10	(7 cm)	3	BR	
	15	1.5	5		
<i>Hypericum</i> "Hidcote"	30	2	3	BR	
<i>Ilex x altaclarensis</i> "Golden King"	40	2	1f	RB	
<i>Ilex aquifolium</i>	30	1.5	1f	RB	
<i>Jasminum nudiflorum</i>	40	2	2		C
<i>Kerria japonica</i>	40	2	3	BR	
<i>Kolwitzia amabilis</i>	30	2	3	BR	
<i>Laurus nobilis</i>	30	2	1f		
<i>Lavandula angustifolia</i> "Hidcote"	8	(9 cm)	3	BR	
	15	1.5	5		
<i>Lavatera olbia</i> "Rosea"	30	2	3		
<i>Leycesteria formosa</i>	40	2	3	BR	
<i>Ligustrum ovalifolium</i>	40	2	2	BR	
<i>Ligustrum ovalifolium</i> "Aureum"	30	2	3	BR	
<i>Lonicera nitida</i>	20	2	3	BR	
<i>Lonicera pileata</i>	30	2	3	BR	
<i>Lonicera x purpusii</i>	40	2	3	BR	
<i>Magnolia grandiflora</i>	50	3	1	RB	
<i>Magnolia x soulangeana</i>	50	3	3	RB	
<i>Magnolia stellata</i>	30	3	3	RB	
<i>Mahonia aquifolium</i>	20	2	2	BR	
<i>Mahonia japonica</i>	25	2	1f	RB	
<i>Olearia x haastii</i>	20	2	3	RB	
<i>Oleria macrodonta</i>	30	2	3		
<i>Osmanthus burkwoodii</i>	30	2	3	RB	
<i>Osmanthus delavayi</i>	15	2	3		
<i>Pachysandra terminalis</i>	8	(9 cm)	1		
		1.5	3		
<i>Pernettya mucronata</i>	20	2	3	RB	
<i>Perovskia atriplicifolia</i> "Blue Spire"	30	2	3		Pruned Mar/Apr
<i>Philadelphus</i> "Belle Etoile"	40	2	3	BR	
<i>Philadelphus</i> "Manteau d' Hermine"	25	2	3	BR	
<i>Phlomis fruticosa</i>	25	2	3		
<i>Phormium tenax</i> "Purpureum"	40	3	3 leaves		
<i>Photinia x fraseri</i> "Red Robin"	40	2	2		
<i>Physocarpus opulifolius</i> "Darts Gold"	30	2	3	BR	
<i>Pieris</i> "Forest Flame"	20	2	3	RB	
<i>Pieris japonica</i> "Variegata"	15	2	3	RB	
<i>Pittosporum</i> "Garnettii"	30	2	1f		
<i>Potentilla dahurica</i> "Manchu"	10	1	3	BR	

NOTE Available as seedlings, cuttings or transplants of height 30 cm for mass planting.

Table 5 — Examples of shrubs

	Minimum height above soil/media level	Minimum container size	Minimum breaks	Alternative root packaging to containers	Comments
		L			
Potentilla "Elizabeth"	25	2	3	BR	
Prunus cistena	30	2	2	BR	
Prunus laurocerasus	40	2	1	RB, BR	
Prunus laurocerasus "Otto Luyken"	20	2	2	RB	
Prunus laurocerasus "Zabelliana"	25 ^a	2	2	RB	
Prunus lusitanica	30	2	1f	RB	
Prunus spinosa (when grown as a bush)	60	4	3	BR	Note
Pyracantha "Orange Glow"	40	2	2		
	50	2	1f		C
Rhamnus alaterna "Argenteovariegata"	40	2	1f		
Rhamnus frangula (syn. Frangula alnus)	40	2	2	BR	
Rhododendron — "Britannia"	30	3	3	RB	
Rhododendron "Golden Torch"	20	3	3	RB	
Rhododendron impeditum	10 ^a	2	3	RB	
"Pink Pearl"	40	4	3	RB	
Rhododendron — Azalea evergreen					
"Hinomayo"	20	2	3	RB	
Rhododendron — Azalea deciduous					
"Cecile"	40	4	3	RB	
Rhododendron — Azalea deciduous					
"Daviesii"	30	3	3	RB	
Rhus typhina	50	2	1	RB	
Ribes sanguineum "Pulborough Scarlet"	40	2	3	BR	
Rosmarinus officinalis	20	1	3		
Rubus "Benenden" (syn. "Tridel")	40	2	3	BR	
Rubus cockburnianus	45	2	2	BR	
Rubus tricolor	20	(7 cm)	2		
	40	1.5	3		C
Ruta graveolens "Jackman's Blue"	15	1	3		
Salix caprea	60		2	BR	Note
Salix elaeagnos	40	2	3	BR	
Salix hastata "Wehrhahnii"	20	2	3	BR	
Salvia officinalis	8	(9 cm)	3		
	15	1.5	4		
Sambucus nigra	40		2	BR	Note
Sambucus racemosa "Plumosa Aurea"	30	2	3	BR	
Santolina chamaecyparissus	8	(9 cm)	3	BR	
	15	1.0	5		
Sarcococca confusa	15	1.5	3	RB	
Senecio "Sunshine"	25	2	3		
Skimmia japonica "Rubella"	20	1.5	3	RB	
Skimmia reevesiana	15	1.5	3	RB	
Sorbaria aitchisonii	50	2	2	BR	

NOTE Available as seedlings, cuttings or transplants of height 30 cm for mass planting.

Table 5 — Examples of shrubs

	Minimum height above soil/media level	Minimum container size	Minimum breaks	Alternative root packaging to containers	Comments
		L			
<i>Spartium junceum</i>	40	2	3		
<i>Spiraea</i> “Goldflame” (syn. <i>S. bumalda</i> CV)	15	2	4	BR	
<i>Spiraea japonica</i> “Alpina”	10	1.5	4	BR	
<i>Spiraea japonica</i> “Anthony Waterer” (syn. <i>S. bumalda</i> CV)	25	2	4	BR	
<i>Spiraea X vanhouttei</i>	40	2	3	BR	
<i>Stephanandra incisa</i> “Crispa”	20	1.5	3	BR	
<i>Symphoricarpos x chenaultii</i> “Hancock”	30 ^a	2	3	BR	
<i>Symphoricarpos rivularis</i>	40	2	3	BR	
<i>Syringa microphylla</i> “Superba”	30	2	3	RB/BR	
<i>Syringa vulgaris</i> “Charles Joly”	50	4	3	RB/BR	
<i>Tamarix pentandra</i>	40	2	2	BR	
<i>Ulex europaeus</i>	1 year seedling	(9 cm)	1		
<i>Ulex europaeus</i> “Plenus”	20	1.5	2		
<i>Viburnum x bodnantense</i>	40	3	2	BR	
<i>Viburnum carlesii</i>	30	3	3	RB	
<i>Viburnum davidii</i>	20 ^a	1.5	2	RB	
<i>Viburnum opulus</i>	40	2	3	BR	
<i>Viburnum plicatum</i> “Mariesii”	30	2	3	RB	
<i>Viburnum rhytidophyllum</i>	40	2	2	RB	
<i>Viburnum tinus</i>	25	2	3	RB	
<i>Vinca major</i> “Variegata”	20	2	2	BR	
<i>Vinca minor</i> “Variegata”	8	(7 cm)	3	BR	
	10	1	3	BR	
<i>Weigela</i> “Bristol Ruby”	40	2	3	BR	
<i>Weigela florida</i> “Foliis Purpureis”	25	2	3	BR	
<i>Yucca filamentosa</i>	20	2	5 leaves	RB	

^a Spread

NOTE Available as seedlings, cuttings or transplants of height 30 cm for mass planting.

Publication(s) referred to

BS 3936, *Nursery stock.*

BS 3936-2, *Specification for roses.*

BS 3936-4, *Specification for forest trees.*

BS 3936-5, *Specification for poplars and willows.*

BS 3936-10, *Specification for ground cover plants.*

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