DRAFT TANZANIA STANDARD

Beehives — Specifications

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0 National Foreword

The Tanzania Bureau of Standards is the statutory national standards body for Tanzania, established under standards Act No. 3 of 1975, amended by Act No. 2 of 2009.

This draft Tanzania Standard is being prepared by BCDC 12 Timber structures technical committee under the supervision of the Building and Construction Divisional Committee (BCDC).

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Beehives — Specification

1 Scope

This draft Tanzania Standard prescribes the requirements for Type A, Type B and Type C of movable frame beehives.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IS 399:1963, *Classification of commercial timbers and their zonal distribution*

IS 1141:1993, *Seasoning of timber — Code of practice*

IS 1150: 1976, *Trade names and abbreviated symbols for timber species*

3 Terms and definitions

For the purpose of this Tanzania Standard, the following terms and definitions shall apply.

3.1 Bee space

the optimum distance between two comb surfaces in a beehive essential for the normal movement and functioning of bees *(see 3.9)*

3.2 Brood chamber

a four-sided wooden box of rectangular cross-section without a top or a bottom, in which the brood frames (see 3.3) are placed

3.3 Brood frame

a frame (see 3.9) made up of a top bar, a bottom bar and two side bars in which the bees develop comb to rear brood

3.4 Crown board (inner cover)

a partition between the super chamber and the roof (top)

3.5 Division board

a wooden board slightly larger than the brood frame and placed in the brood chamber to prevent the bees from going beyond it, thus limiting the capacity of the brood chamber.

3.6 Dummy board

a wooden board equal in outside length and height dimensions to the brood frame. This is used in parallel at the end of brood frames, generally, in weak and developing colonies.

3.7 Entrance gate

a wooden block at the hive entrance usually provided with slots of suitable size. The slots may be covered with queen excluder sheet *(see 3.10)*.

3.8 Floor board

a wooden board on which the brood chamber rests.

3.9 Frame

a frame of wood, of suitable size, to hold a comb.

NOTE — The frames are so constructed that a series of them may be placed in a vertical position in the brood chamber or the super chamber so as to leave space (bee space) in between them for bees to move.

3.10 Queen excluder sheet

a set of openings meant for restricting the movement of the queen from the brood chamber to the super.

3.11 Queen gate

a provision made on the entrance gate by a queen excluder sheet *(see 3.10)* for preventing queen from going out and also enemies like wasps, etc. which are bigger than worker bees, from entering.

3.12 Reinforcement

a wire parallel to the top bar and attached to the sides of frames to reinforce the comb.

3.13 Roof (top)

a wooden cover with four sides and a top and placed on the **i**nner cover.

3.14 Super chamber

a four-sided wooden box of rectangular cross-section without a top or a bottom in which the super frames *(see 3.15)* are placed. It is similar to the brood chamber *(see 3.2)* but of lesser height for 'A' and 'B' type and of same height in 'C' type and placed above it when in need.

3.15 Super frame

A frame *(see 3.9)* which has a depth less than that of the brood frame *(see 3.3)* for 'A' and 'B' type beehives but the same as brood frame in 'C' type beehive.

4 Types and sizes of beehives

4.1 There shall be three types of beehives, namely Type A, Type B and Type C. In Type A, there shall be provision of any of the three different bee spaces, namely 7 mm, 8 mm or 9 mm. In Type B, any of the two different bee spaces, namely, 8 mm or 9 mm shall he provided. In Type C, 10 mm bee space shall be provided. The A and B Type hives may have 10, 8 or 4 frames and C type hive shall have 10 frames.

4.1.1 The dimensions for different parts of Type A hive (see **Figure** 1A) shall be as given in Table 1 (10 frames), Table 2 (8 frames) and Table 3 (4 frames).

4.1.2 The dimensions for different parts of Type B hives (see **Figure** 1A) shall be as given in Table 4 (10 frames). Table 5 (8 frames) and Table 6 (4 frames).

4.1.3 The dimensions for different parts of Type C hive (see **Figure** 1A) shall be as given in Table 7 (10 frames).

5 Materials

5.1 Wood

For the purpose of beehives, well-seasoned timber (see IS 1141) such as *Grevillea robusta* (Grevillea), *Eucalyptus* spp. (Mkalatusi), *Pinus patula* (Msindano), *Tectona grandis* (Msaji/Teak), *Cedrea odorata* (Mwerezi), *Gmelina arborea* (Teak nyeupe/Mfudufudu) (see IS 399 and IS 1150), *Acacia mellifera* (Kiti(Maasai),Mgunga/Msasa(Shambaa),Mnoa(Pare)) and *Acacia xanthophloea*(Elerai (Maasai),Mkongea (Shambaa/Kwere),Narmo (Iraqw),Olerai (Maasai)) shall be used. It shall be free from decay, insect-holes, dead knots, shakes and splits. The slope of the grain shall not be more than one in eight.

5.2 Plastic

If used for making of beehives shall be of food grade.

5.3 Wire

If used for reinforcement shall he galvanized mild steel wire of diameter 0.4 mm and shall be suitably anchored in the side of bars by nails.

6 Constructional requirements

The beehive shall consist of the following parts with the constructional details as under:-

a) Floor board (with entrance gate);
b) Brood chamber (with brood frame);
c) Super chamber (with super frames);
d) Inner cover (crown board) and
e) Roof (top).

6.1 Floor board (with entrance gate)

The floor board shall be made of wood 15 mm thick and the dimensions shall be as given in Tables 1 to 7. If it is made by using more than one piece of wood, the pieces shall be joined by tongue and groove joints. The slant diagonal groove 10 mm deep and 15 mm wide shall be made along the entire length of the inner side of each of the two side-strips of the floor board to insert the above wooden plank in it. These side strips

shall project 25 mm and 10mm, above the inserted wooden plank at the alternate front and rear sides of the plank respectively. The side strips shall be 50 mm high, the back cleats, 23 mm wide and 10 mm thick shall be fixed on the shallow alternate edges of the rear sides of the floor board. The side strips and back cleats should be fixed by nails to the bottom plank. Two wooden blocks 23 mm x 23 mm thick, between 45 mm to 55 mm in length shall be fitted on both sides of the floor board in front of the hive entrance in order to avoid slipping of the entrance gate (Figure 1 A). It is recommended that there may be two holes 3 mm in diameter and 10 mm deep on both the faces of the side strips of the bottom board, corresponding to the two holes of the centre beneath the side walls of brood chamber. Eyelets should be fixed in these holes and small easily removable galvanized iron wire pieces, 2 mm in diameter and 20 mm long should be provided in these holes. This will avoid slipping of the hive parts during migration of bee-colonies.

Alternatively, the non-reversible floor board may be used. The bottom of the floor board shall be made of not more than two pieces of wood which shall he joined by tongue groove joints. Two sloping strips shall be fitted on the edges of length sides of the plank. These strips shall be 23 mm wide, 25 mm high at the entrance side and 10 mm high at the back side and 361 mm long for Type 'A', 431 mm long for 'B' type hive and 560 mm long for type 'C' beehive. At the back side of the plank a strip of 23 mm wide and 10 mm high should be fitted on the edge of the breadth of the plank and in between two ends of the sloping side strips. The length of the back strips will be according to the type of hive accommodating 4, 8 or 10 frames. These three strips shall be fitted to the plank with 3 screws on each strip.

6.1.1 *Entrance gate*

The entrance gate shall be made of wood 40 mm x 20 mm. Two grooves, one of them 100 mm to 150 mm wide and 15 mm deep on one side and the second groove of 50 mm wide and 10 mm deep on the opposite side shall be cut on the entrance block as shown in Figure 1 A and Figure 3A. These grooves shall be cut 50 mm from one end of the block.

6.2 Brood chamber

The dimensions of the brood chambers shall be as given in Tables 1 to 7. A rabbet, 10 mm wide and 16 mm deep, shall be cut in the front and back walls of the brood chamber. The brood frames *(see 6.6)* shall rest on these rabbeted walls. There shall be grooves or notches on two opposite outer faces of the side walls for lifting the brood chamber. These shall be made in the centres of the outer faces of the chamber. The four sides of the chamber shall be joined by special box corner or finger or dovetail or tongue and groove joints. It is recommended that there may be two holes of 3 mm diameter and 10 mm deep on the opposite upper faces of the side walls of the brood chamber, corresponding to the similar two holes on the lower faces of the side walls of super chamber. Eyelets should be fixed in these holes and small pieces of removable galvanized iron wire pieces of 2 mm diameter and 20 mm long should he provided in these holes to avoid slipping of the hive parts during migration of bee-colonies.

6.3 Super chamber

The dimensions shall be as given in Tables 1 to 7. A rabbet, 10 mm wide and 16 mm deep, shall be cut in the front and back walls of the super chamber. The super frames *(see 6.7)* shall rest on these rabbeted walls. There shall be grooves or notches on two opposite outer faces of the side walls for lifting the super chamber. These shall he made in the centres of outer faces of the chamber. Tile four sides of the chamber shall be joined by special box corners or fingers, dovetail or tongue and groove joints.

6.4 Inner cover (crown board)

The dimensions of the inner cover shall be as given in Tables 1 to 7. The inner plank shall be 15 mm thick. On one of the sides of the plank, 23 mm wide and 7 mm or 8 mm or 9 mm thick strip, according to the bee space used in the hive should be fixed all along the four sides of the plank. In the centre the inner cover shall have an opening of 100 mm x 30 mm for bee escape (see Figure 1A). For 'C' type, however, a wooden plank of 15 mm thickness having 15 mm thick and 20 mm broad wooden strip on the borders of one side of inner cover shall be used.

6.5 Roof (Top)

6.5.1 *Walls*

The dimensions of the walls shall be as given in Tables 1 to 7. The walls shall be 18 mm thick. The centres of the side walls shall have one slot each of 15 mm x 25 mm or hole of 25 mm diameter. The holes shall be covered with wire gauze of aperture 1 mm. The four walls shall be joined by dovetail or tongue and groove joints. Four supporting strips of minimum 20 mm width and 28 mm thickness shall be fixed inside

the walls. These four supporting strips of the inside walls of the roof shall be fixed 35 mm high from the lower edges of the walls.

6.5.1.1 Instead of deep roof as above, shallow roof may also be used. The thickness of the walls and the roof board and length and breadth of the shallow roof should be the same as given in 6.4.1, 6.4.2 and table 1 to 7. The shallow roof shall however be only 50 mm in height and devoid of ventilation holes. It shall have four supporting strips inside the side walls.

6.5.2 *Roof board*

The roof board shall be 18 mm thick. It shall be made by using not more than three pieces. It shall be fixed to the walls with nails. The roof shall be suitably covered, if made of joint pieces, to protect against rain. The sheet shall extend 15 mm down below the top edge of the roof board. The roof shall be made flat.

6.6 Brood frame *(see Figure 1D)*

The frame may be provided with a foundation sheet made of bee wax or other suitable food grade materials.

6.6.1 *Overall dimensions*

The dimensions of the brood frame shall be as given in Tables 1 to 7. The top bar shall extend equally on both sides of the frame.

6.6.2 *Form of frame*

The brood frame shall have the top bar, two side bars and bottom bar conforming to the provisions given in 6.5.2.1, 6.5.2.2 and 6.5.2.3 respectively.

6.6.2.1 *Top bar*

The top bar shall be 23 mm wide, 10 mm thick and 260 mm (Type A), 330 mm (Type B), 483 mm (Type C) in length. A groove 2 mm wide and 2 mm deep shall he cut lengthwise in the centre underneath the top bar for fixing comb foundation. The ends of the top bar may be tapered, if needed. The ends of the side bar shall be joined to the top bar by tongue and groove joint.

6.6.2.2 *Side bar*

The side bar may preferably be of shoulder type or with separate bee-spacer. It shall be 10 mm thick, 23 mm wide for ‘A’ and ‘B’ types and 25 mm for ‘C’ type at the bottom and 30 mm, 31 mm, 32 mm or 35 mm (that is, for bee space 7 mm, 8 mm, 9 mm or 10 mm) wide at the top to provide one of the four bee spaces specified. Two holes for wire reinforcements shall be made at a distance of 50 mm and 100 mm from the top of the side bar for ‘A’ and ‘B’ types but for ‘C’ type, 4 holes shall be made at a distance of 50 mm from the top.

Alternatively keeping the width of the side bar as 23 mm for ‘A’ and ‘B’ type and 25 mm for ‘C’ type, separate wooden bee space or metal spacers (60 mm x 10 mm x 3.5 mm or 4 mm or 4.5 mm or 5 mm) may be fixed to the side bars. This would ensure greater accuracy in bee space between two frames and automatically adjust distance between the centres of the two adjacent frames.

6.6.2.3 *Bottom bar*

In case of Type A frames, the bottom bar shall be 15 mm wide, 10 mm thick and 230 mm in length. For Type B frames, it shall be 20 mm wide, 10 mm thick and 300 mm in length and for Type C frames, it shall be 19 mm wide, 10 mm thick and 448 mm long. The ends shall have a groove 10 mm x 10 mm to fit in the tongue of the side bar.

6.7 Super frame

6.7.1 *Overall dimensions*

The dimensions of the super frame shall be given in Tables 1 to 7. The top bar shall extend equally on both sides of the frame.

6.7.2 *Form of frame*

The super frame shall have top bar, two side bars and bottom bar conforming to the description given in 6.7.2.1, 6.7.2.2 and 6.7.2.3 respectively.

6.7.2.1 *Top bar*

The top bar shall have the same dimensions as given in 6.6.2.1.

6.7.2.2 *Side bar*

The side bar may preferably be of shoulder type or with separate bee-spacer. It shall be 10 mm thick, 23 mm wide at the bottom and 30 mm, 31 mm or 32 mm (that is, for bee space 7 mm, 8 mm or 9 mm) wide at the top to provide one of the three bee spaces, specified. A hole in the middle of the two side bars shall be made for wire reinforcement.

Alternatively, keeping the width of the side bar as 23 mm, separate wooden been space or metal spacers (60 mm x 10 mm x 3.5 mm or 4 mm or 4.5 mm) may be fixed to the side bars. This would ensure greater accuracy in the bee space between two frames and automatically adjust distance between the centres of the two adjacent frames.

6.7.2.3 *Bottom bar*

The bottom bar shall have the same dimensions as given in 6.6.2.3. Groove 2 mm wide and 2 mm deep shall be cut lengthwise in the centre in the inner side of the bottom bar and underneath the top bar of the super frame for fixing comb foundation.

6.8 Division board *(see also Figure 1E)*

The dimensions of the division board shall be as given in Tables 1 to 7. A top bar, 23 mm wide and 16 mm thick, shall be fixed to the board, with nails, so that it extends equally on both sides of the board. The distance between two consecutive nails shall be not more than 50 mm. The division hoard shall have a slope, at its bottom edge, corresponding to the slope of the floor board. As shown in Figure 1 A side strips of 10 mm x 10 mm should be fixed to the division board to avoid warping of the plank.

6.9 Dummy board *(see also Figure 1E)*

The dimensions of the dummy board shall be as given in Tables 1 to 7. A top bar, 23 mm wide and 10 mm thick, shall be fixed to the board, with nails, so that it extends equally on both sides of the board.

The distance between two consecutive nails shall be not more than 50 mm. As shown in Figure 1 A, side strips of 10 mm x 10 mm should be fixed to the dummy board to avoid warping of the plank.

6.10 Queen excluder

The queen excluder shall be made of parallel wire mounts or a perforated plate of rustproof metal, such as, zinc or aluminium of not less than 1.25 mm thickness or food grade plastic. The width of the openings or slots in the queen excluder shall be 3.50 mm, 3.75 mm, 4.00 mm or 4.50 mm. The maximum length of the openings or slots shall be 20 mm.

6.11 Queen gate

A piece of queen excluder sheet having adequate width of the openings (see 6.10) shall be fitted on the slots of entrance gate (see 6.1.1 and Figure 3). The dimensions of the entrance gate and queen gate shall, therefore, be same. The length of the entrance gate shall be according to the breadth of the floor board (see Figure 1A).

7 Workmanship

7.1 Finish

The different parts of the beehives shall have a smooth finish with the edges trimmed square and smooth. Parts of the beehive exposed directly to weather shall be painted with a suitable protective paint. The paint shall be non-toxic and shall not have any odour disagreeable to the bees. If painted, the colour or the paint shall be white, blue, yellow, green or grey.

7.2 Joints

All joints shall be sound and shall withstand normal use. Walls of chambers and roof shall be jointed by special box corner joints or finger joints or dovetail joints or tongue and groove joints properly nailed *(see* Figure 3A and 3B).

When the use of nails for joints is specified, there shall be one nail at each end. The distance between two consecutive nails shall be not more than 75 mm.

8 Packing and marking

8.1 Packing

The beehive shall be supplied in the complete form, properly assembled or in separate parts as agreed to between the purchaser and the vendor. Unless otherwise specified, the beehive parts shall be packed according to trade practices in such a way as to protect them from damage in transit and during storage.

8.2 Marking

8.2.1 The following information shall be engraved on each part:

a) name of the part and its size (for example; Brood chamber, Type A, Bee space 8 mm);
b) trade- mark, if any;
c) batch or code number;
d) name of the manufacturer; and
e) date of manufacture.

8.2.2 TBS Standards Mark of Quality.

The product may also be marked with the Standard Mark of Quality. The use of the Standard Mark of Quality is governed by the provisions of the Tanzania Bureau of Standards Act No.3 of 1975 amended by Act No.2 of 2009 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Tanzania Bureau Standards.

Table 1 — Dimensions of various parts of type A beehives with 10 frames (Clause 4.1.1 and Fig 1A)

Description	**Distance between centres of two adjacent frames = 30 mm (Bee spaces = 7 mm)**			**Distance between centres of two adjacent frames = 31 mm (Bee spaces = 8 mm)**			**Distance between centres of two adjacent frames = 32 mm (Bee spaces = 9 mm)**		
	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2
Floor board	361	356	50	361	356	50	361	376	50
Brood frame:									
Outside	230	-	165	230	-	165	230	-	165
Inside	210	-	145	210	-	145	210	-	145
Brood chamber:									
Outside	286	356	172	286	366	173	286	376	174
Inside	240	310	172	240	320	173	240	330	174
Super frame:									
Outside	230	-	85	230	-	85	230	-	85
Inside	210	-	64	210	-	65	210	-	65
Super chamber:									
Outside	286	356	92	286	366	93	286	376	92
Inside	240	310	92	240	320	93	240	330	91
Inner cover (crown board)	286	356	22	286	366	23	286	376	24
Roof (top): Outside	328	398	100	328	408	100	328	418	100
Dummy board	230	-	165	230	-	165	230	-	165
Division board	236	-	One end 182 Other end 194	236	-	One end 183 Other end 195	236	-	One end 184 Other end 196

Table 2 — Dimensions of various parts of type A Beehives with 8 frames (Clause 4.1.1 and Fig 1A)

Description	Distance between centres of two adjacent frames = 30 mm (Bee spaces = 7 mm)			Distance between centres of two adjacent frames = 31 mm (Bee spaces = 8 mm)			Distance between centres of two adjacent frames = 32 mm (Bee spaces = 9 mm)		
	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2
Floor board	361	296	50	361	304	50	361	312	50
Brood frame:									
Outside	230	-	165	230	-	165	230	-	165
Inside	210	-	145	210	-	145	210	-	145
Brood chamber:									
Outside	286	296	172	286	304	173	286	312	174
Inside	240	250	172	240	258	173	240	266	174
Super frame:									
Outside	230	-	85	230	-	85	230	-	85
Inside	210	-	65	210	-	65	216	-	63
Super chamber:									
Outside	286	296	92	286	304	93	286	312	94
Inside	240	250	92	240	258	93	240	266	94
Inner cover (crown board)	286	296	22	286	304	23	286	312	24
Roof (top): Outside	328	338	100	328	346	100	328	354	100
Dummy board	230	-	165	230	-	165	230	-	165
Division board	236	-	One end 182 Other end 194	236	-	One end 183 Other end 195	236	-	One end 184 Other end 196

Table 3 — Dimensions of various parts of type A beehives with 4 frames (Clause 4.1.1 and Fig 1A)

Description	Distance between centres of two adjacent frames = 30 mm (Bee spaces = 7 mm)			Distance between centres of two adjacent frames = 31 mm (Bee spaces = 8 mm)			Distance between centres of two adjacent frames = 32 mm (Bee spaces = 9 mm)		
	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2
Floor board	361	176	50	361	180	50	361	184	50
Brood frame:									
Outside	230	-	165	230	-	165	230	-	165
Inside	210	-	145	210	-	145	210	-	145
Brood chamber:									
Outside	286	176	172	286	180	173	286	184	174
Inside	240	130	172	240	134	173	240	138	174
Super frame:									
Outside	230	-	85	230	-	85	230	-	85

Description	Distance between centres of two adjacent frames = 30 mm (Bee spaces = 7 mm)			Distance between centres of two adjacent frames = 31 mm (Bee spaces = 8 mm)			Distance between centres of two adjacent frames = 32 mm (Bee spaces = 9 mm)		
	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2
Inside	210	-	65	210	-	65	216	-	63
Super chamber:									
Outside	286	176	92	286	180	93	286	184	94
Inside	240	130	92	240	134	93	240	138	94
Inner cover (crown board)	286	176	22	286	180	23	286	184	24
Roof (top): Outside	328	218	100	328	222	100	328	236	100
Dummy board	230	-	165	230	-	165	230	-	165
Division board	236	-	One end 182 Other end 194	236	-	One end 183 Other end 195	236	-	One end 184 Other end 196

Table 4 — Dimensions of various parts of type B beehives with 10 frames (Clause 4.1.2 and Fig 1A)

Description	Distance between centres of two adjacent frames = 31 mm (Bee spaces = 8 mm)			Distance between centres of two adjacent frames = 32 mm (Bee spaces = 9 mm)		
	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2
Floor board	431	366	50	431	376	50
Brood frame:						
Outside	300	-	195	300	-	195
Inside	280	-	175	280	-	175
Brood chamber:						
Outside	356	366	203	356	376	204
Inside	310	320	203	310	330	204
Super frame:						
Outside	300	-	105	300	-	105
Inside	280	-	85	280	-	85
Super chamber:						
Outside	356	176	92	286	180	93
Inside	310	130	92	240	134	93
Inner cover (crown board)	356	366	23	356	376	24
Roof (top): Outside	398	408	100	398	418	100
Dummy board	300	-	195	300	-	195
Division board	306	-	One end 213 Other end 225	306	-	One end 214 Other end 226

Table 5 — Dimensions of various parts of type B beehives with 8 frames (Clause 4.1.2 and Fig 1A)

Description	Distance between centres of two adjacent frames = 31 mm (Bee spaces = 8 mm)			Distance between centres of two adjacent frames = 32 mm (Bee spaces = 9 mm)		
	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2
Floor board	431	304	50	431	312	50
Brood frame:						
Outside	300	-	195	300	-	195
Inside	280	-	175	280	-	175
Brood chamber:						
Outside	356	304	203	356	312	204
Inside	310	258	203	310	266	204
Super frame:						
Outside	300	-	105	300	-	105
Inside	280	-	85	280	-	85
Super chamber:						
Outside	356	304	113	356	312	114
Inside	310	258	113	310	266	114
Inner cover (crown board)	356	304	23	356	312	24
Roof (top): Outside	398	346	100	398	354	100
Dummy board	300	-	195	300	-	195
Division board	306	-	One end 213 Other end 225	306	-	One end 214 Other end 226

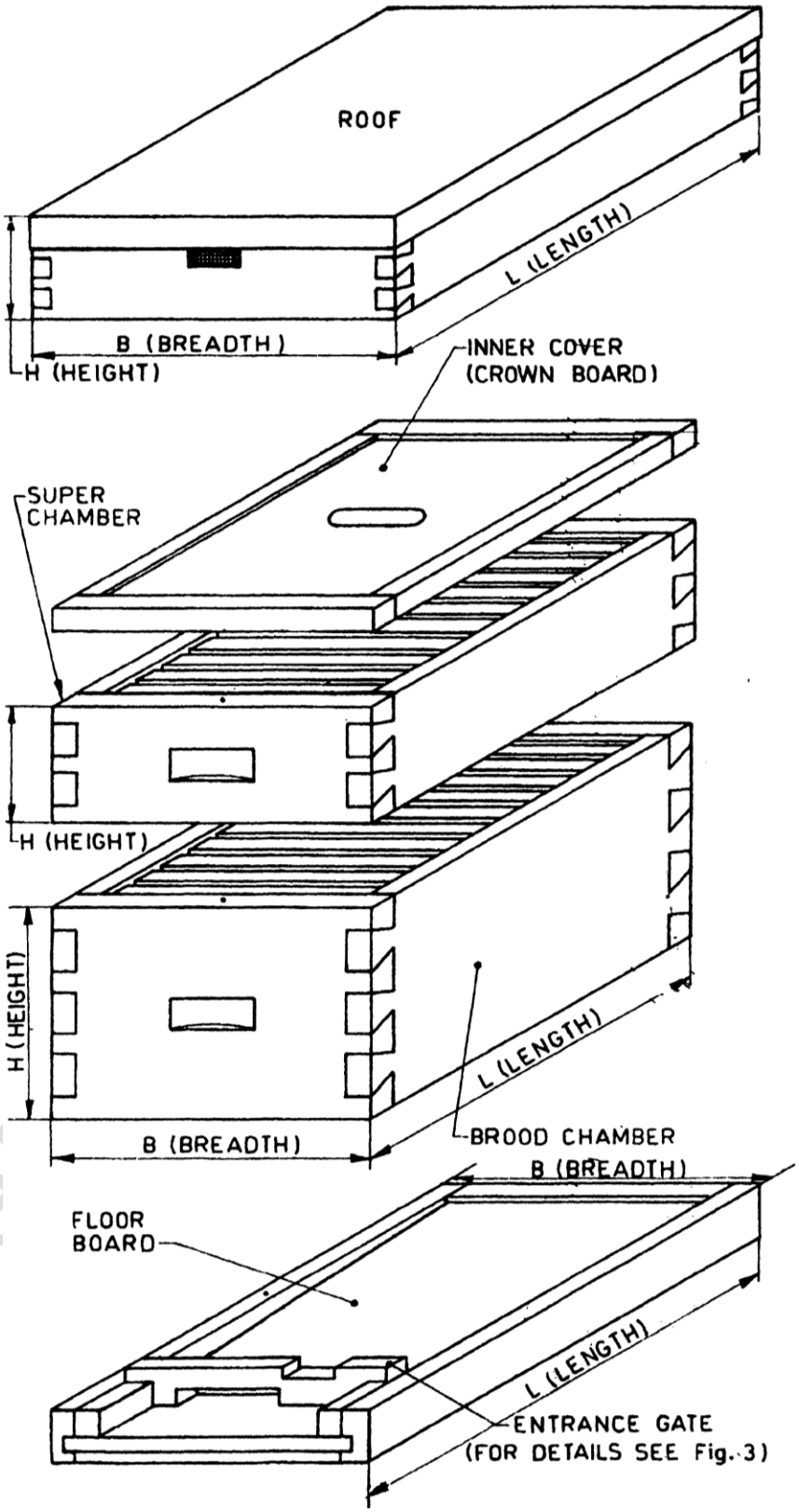
Table 6 — Dimensions of various parts of type B beehives with 4 frames (Clause 4.1.2 and Fig 1A)

Description	Distance between centres of two adjacent frames = 31 mm (Bee spaces = 8 mm)			Distance between centres of two adjacent frames = 32 mm (Bee spaces = 9 mm)		
	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2
Floor board	431	180	50	431	184	50
Brood frame:						
Outside	300	-	195	300	-	195
Inside	280	-	175	280	-	175
Brood chamber:						
Outside	356	180	203	356	184	204
Inside	310	134	203	310	138	204
Super frame:						
Outside	300	-	105	300	-	105
Inside	280	-	85	280	-	85
Super chamber:						
Outside	356	304	113	356	312	114
Inside						

Description	Distance between centres of two adjacent frames = 31 mm (Bee spaces = 8 mm)			Distance between centres of two adjacent frames = 32 mm (Bee spaces = 9 mm)		
	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2
	310	258	113	310	266	114
Inner cover (crown board)	356	304	23	356	312	24
Roof (top): Outside	398	346	100	398	354	100
Dummy board	300	-	195	300	-	195
Division board	306	-	One end 213 Other end 225	306	-	One end 214 Other end 226

Table 7— Dimensions of various parts of type C beehives with 10 frames (Clause 4.1.3 and Fig 1A)

Description	Distance between centres of two adjacent frames = 35 mm (Bee spaces = 10 mm)		
	Length (L) mm ± 2	Breadth (B) mm ± 2	Height (H) mm ± 2
Floor board	560	413	55
Brood/Super frame:			
Outside	448	-	232
Inside	428	-	192
Brood/Deep Super chamber:			
Outside	508	180	242
Inside	464	368	242
Inner cover (crown board)	508	413	25
Roof (top): Outside	560	465	85
Dummy board	448	-	232



1A Exploded Assembly

Figure 1— Beehive and its components (continued)

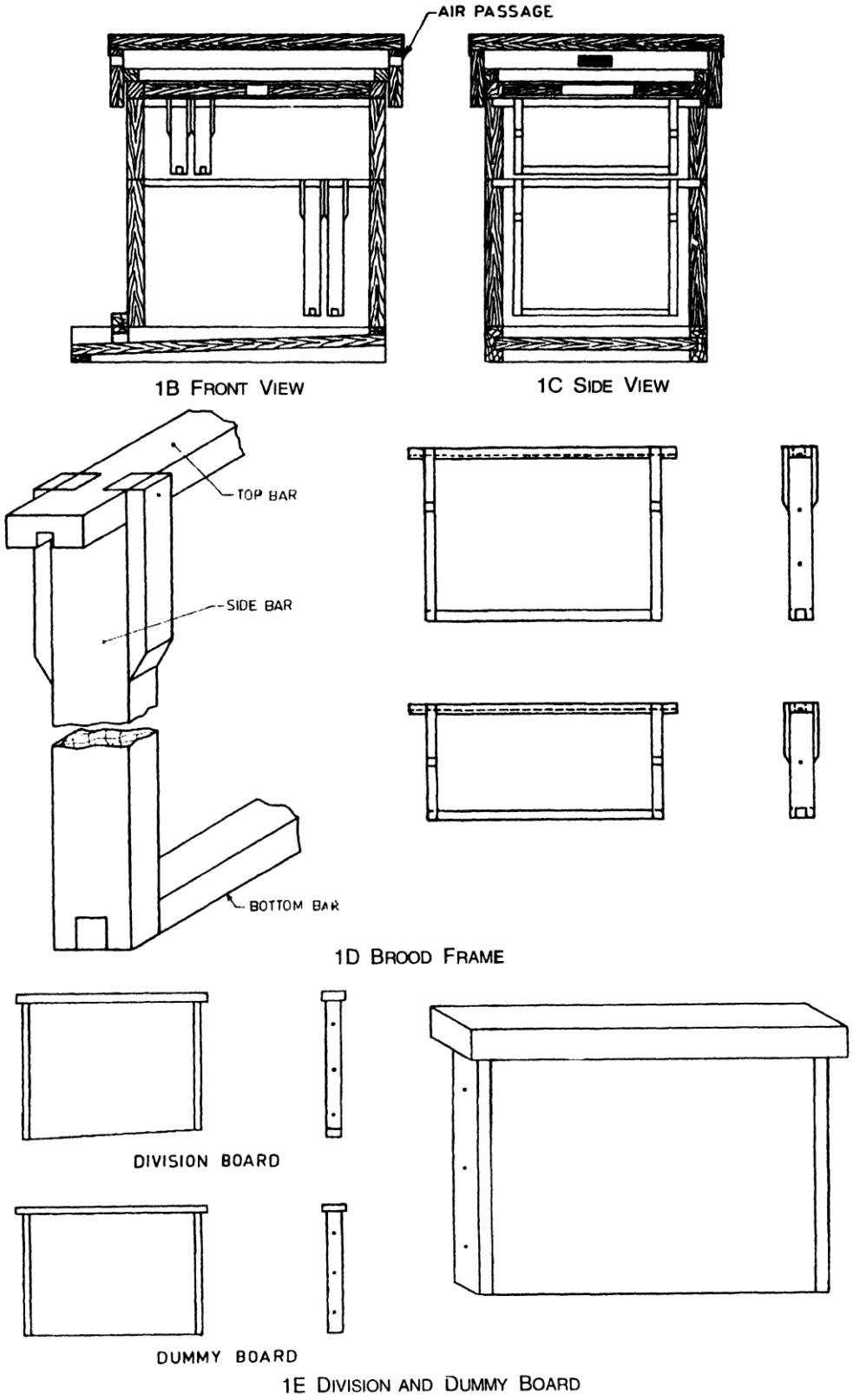


Figure 1 — Beehive and its components

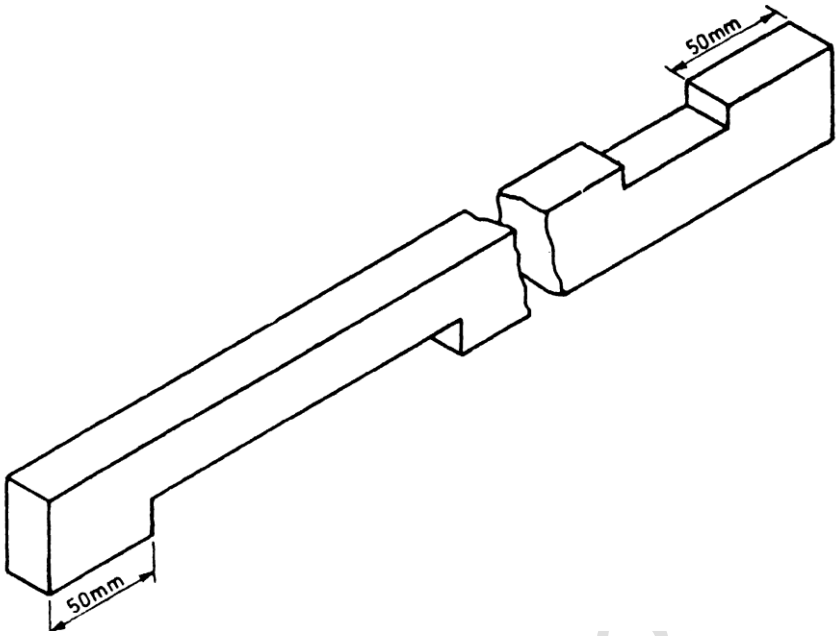


Figure 2 — Entrance Gate

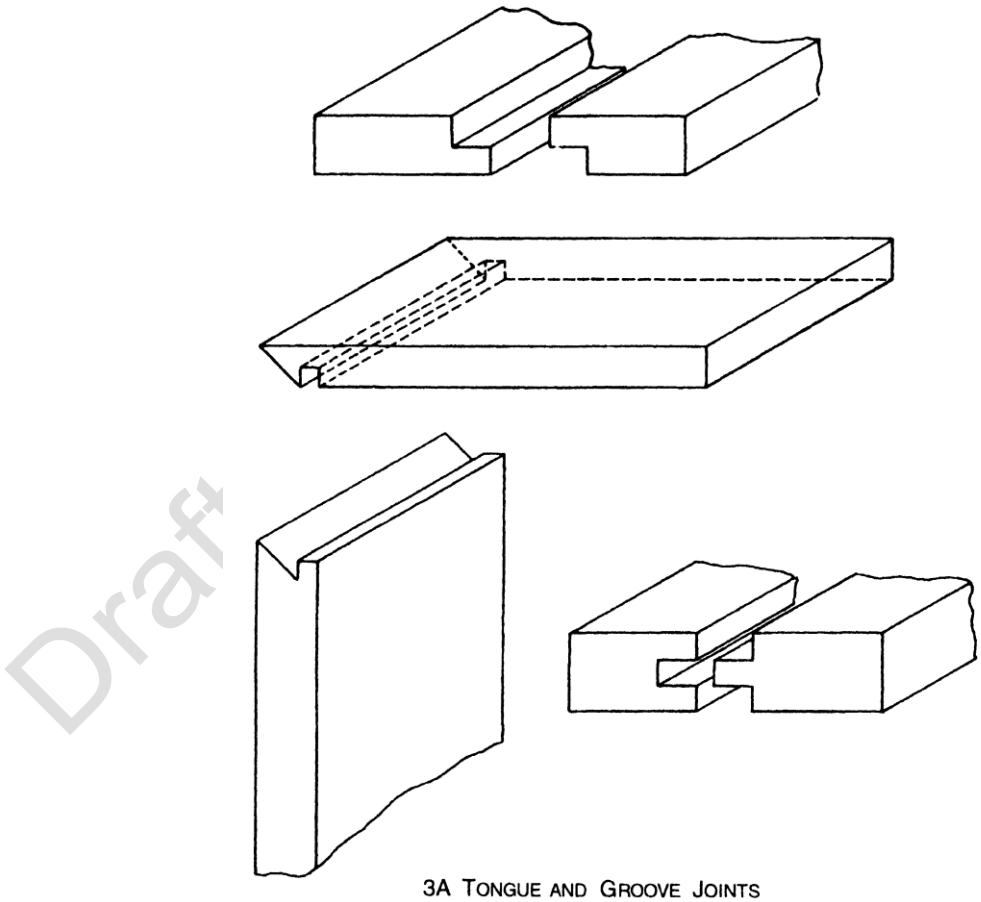
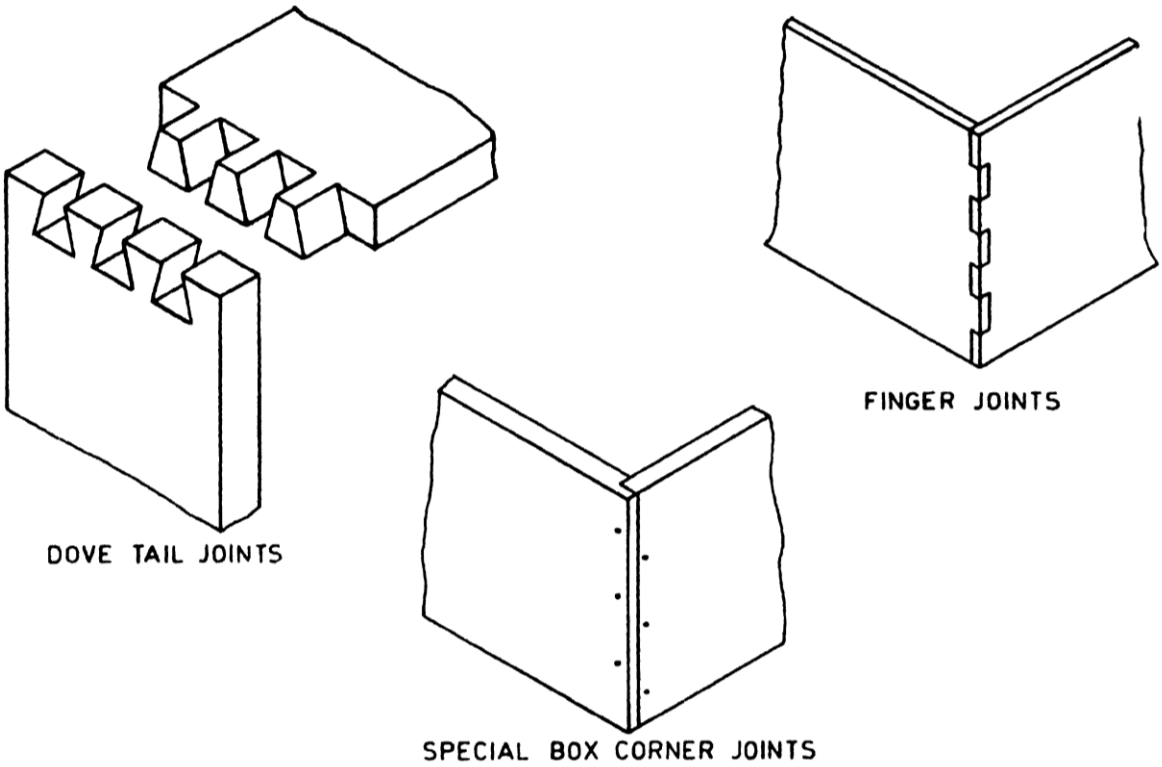


Figure 3 — Joints (continued)



3B Dovetail, Finger and special box corner joints

Figure 3 — Joints

