INTERNATIONAL STANDARD 1751

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Shipbuilding — Ships' side scuttles

Construction navale — Hublots de navires

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 1751 was developed by Technical Committee ISO/TC 8, *Shipbuilding,* and was circulated to the member bodies in July 1975.

It has been approved by the member bodies of the following countries :

Australia	France	Norway
Austria	Germany	Romania
Belgium	Ireland	Sweden
Bulgaria	Italy	Turkey
Canada	Japan	United Kingdom
Czechoslovakia	Korea, Dem. P. Rep. of	Yugoslavia
Finland	Netherlands	

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Poland
U.S.S.R.

This International Standard cancels and replaces ISO Recommendation R 1751-1971, of which it constitutes a technical revision.

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Shipbuilding — Ships' side scuttles

0 INTRODUCTION

This International Standard is based on the experience of side scuttle and glass manufacturers, shipbuilders and authorities who apply to ships the Regulations of the International Convention for the Safety of Life at Sea, 1960[1] and of the International Convention on Load Lines, 1966.

1 SCOPE AND FIELD OF APPLICATION

This International Standard gives definitions and lays down a classification (types and models), the dimensions for interchangeability and construction, materials, testing, and designation of ships' side scuttles.

2 REFERENCES

ISO 614, *Shipbuilding — Toughened safety glass panes for ships' side scuttles and rectangular windows — Punch method of non-destructive strength testing.*

ISO 1095, *Shipbuilding — Toughened safety glass panes for ships' side scuttles.*

ISO 3902, *Shipbuilding — Gaskets for ships' side scuttles and rectangular windows.*

ISO 5780, *Shipbuilding — Ships' side scuttles — Positioning.*[2]

ISO 5797, *Shipbuilding — Fire resistant glass panes for ships' side scuttles and rectangular windows.*[3]

ISO 5895, *Shipbuilding — Ships' side scuttles — Installation.*[3]

3 DEFINITIONS

For the purpose of this International Standard, the following definitions apply.

3.1 ships' side scuttle : An opening hinged round window or non-opening round window with or without deadlight, made of metallic material having a glass pane with dimensions and of materials according to ISO 1095, which is used in ships in accordance with the relevant regulations. (See clause 11.)

NOTE — All other kinds of round window, for example non-opening very light type with main frame of Z-shaped profile and other special types, do not belong, in the sense of this International Standard, to the type "ships' side scuttle".

3.1.1 left-hand model (L) : An opening model with the hinge of the glassholder on the left side when viewed from the side towards which it opens and the deadlight opening upwards. (See figure 1.)

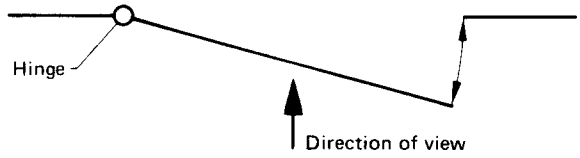


FIGURE 1 — **Left-hand side scuttle**

3.1.2 right-hand model (R) : An opening model with the hinge of the glassholder on the right side when viewed from the side towards which it opens and the deadlight opening upwards. (See figure 2.)

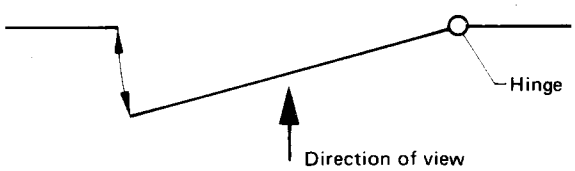


FIGURE 2 — **Right-hand side scuttle**

3.1.3 common hinge model (S) : An opening model with both the glassholder and the deadlight on the same hinge.

1) To be replaced by the Regulations of the International Convention for the Safety of Life at Sea, 1974, when they are brought into force.

2) At present at the stage of draft.

3) In preparation.

3.2 Components

The denomination of the main components of side scuttles is given in table 1. (See figures 3 and 4.)

NOTE – Figures 3 and 4 do not define the construction of the side scuttles; they are only examples.

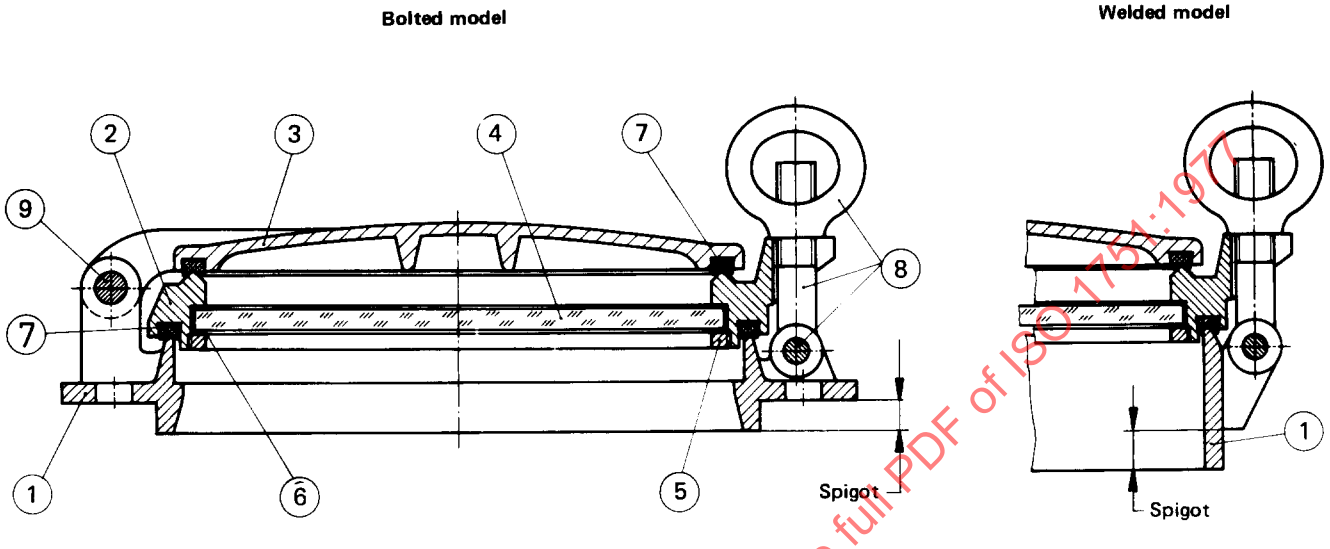


FIGURE 3 – **Opening side scuttle with deadlight**

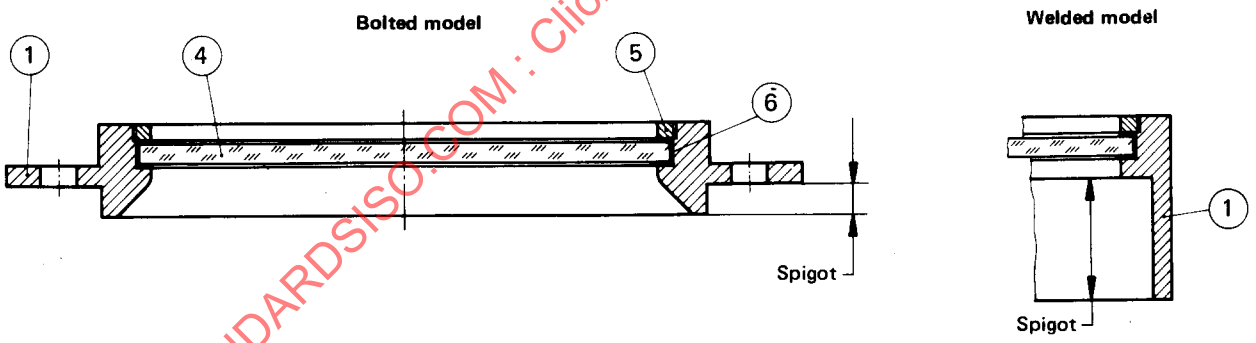


FIGURE 4 – **Non-opening side scuttle without deadlight**

TABLE 1 – **Components**

Component No.	Denomination of main components
1	Main frame
2	Glassholder
3	Deadlight
4	Glass pane
5	Glass retaining ring
6	Glazing material
7	Gasket (for glassholder and deadlight)
8	Closing device (swingbolt, nut and pin)
9	Hinge pin

4 CLASSIFICATION

Side scuttles shall be classified by types, models and nominal sizes in accordance with 4.1, 4.2 and 4.3 respectively.

Further classification characteristics are the material classes. See 7.1.

NOTE – For a survey of the standardized side scuttles, see 5.1 to 5.4.

4.1 Types

- Type A : heavy-type side scuttle;
- Type B : medium-type side scuttle;
- Type C : light-type side scuttle.

NOTE – The differentiation between the types A, B and C is derived from the thickness of the glass pane (tables 4 to 7) and the tensile strength and elongation of the material for the main components (tables 12 and 13).

4.2 Models

Models are designated according to their principal characteristics as given in table 2.

4.3 Nominal sizes

The nominal size is the clear light diameter d_1 of the side scuttle. (See table 3.)

5 MAIN DIMENSIONS

The main dimensions of a side scuttle shall be as given in the tables 4 to 7. Figures 5 to 12 in 5.1 to 5.4 do not define the construction; they are only intended to indicate the standardized dimensions given in the tables.

TABLE 2 – **Principal characteristics of models**

Opening or non-opening	**Dead-light**	**Further attributes**	**Fastening**	
			bolted (B)	welded (W)
			code for designation of model	
Opening	with	left-hand (L)	LB	LW
		right-hand (R)	RB	RW
		common hinged (S)	SB	SW
	without	–	LRB	LRW
Non-opening	with[1] without[2]	–	NB	NW

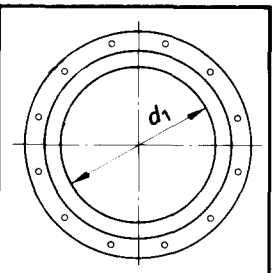
1) For types A and B.

2) For type C.

TABLE 3 – **Nominal sizes**

Dimensions in millimetres

Nominal size d_1		
type A	type B	type C
200 250 300 350 400		
–	450	



5.1 Opening side scuttles with deadlight (types A and B)

5.1.1 *Bolted models*

Model LB
left-hand opening

Model RB
right-hand opening

Model SB
common hinged

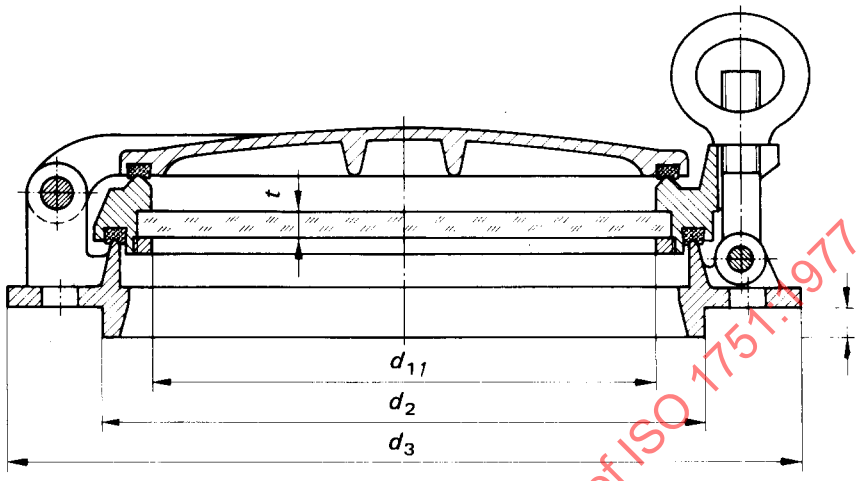


FIGURE 5 — **Opening side scuttle with deadlight, bolted**

5.1.2 *Welded models*

Model LW
left-hand opening

Model RW
right-hand opening

Model SW
common hinged

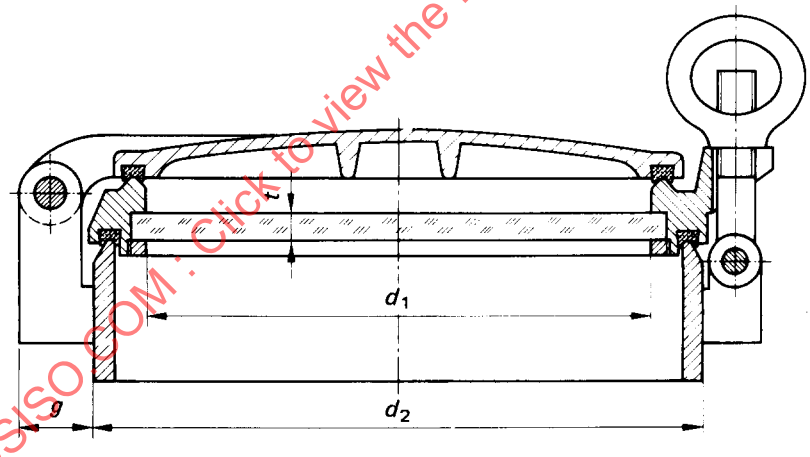


FIGURE 6 — **Opening side scuttle with deadlight, welded**

TABLE 4 — **Opening side scuttles with deadlight**

Dimensions in millimetres

Type	Nominal size d_1		d_2	d_3 max.	g max.	Glass thickness t [1]		Minimum numbers of fasteners [2]			
								type A		type B	
						type A	type B	glass-holder	dead-light	glass-holder	dead-light
A and B	200	200	250	350	50	10	8	2	2	2	2
	250	250	305	400	47,5	12	8	3	3	3	2
	300	300	360	450	45	15	10	3	3	3	2
	350	350	410	500	45	15	12	3	3	3	3
	400	400	460	550	45	19	12	3	3	3	3
B	–	450	510	600	45	–	15	–	–	4	3

1) In special cases a greater glass thickness shall be used for obscured glass panes. (See table 9.)

2) The number of fasteners comprises swingbolts and hinges with round hole. (See 6.4.)

5.2 Opening side scuttles without deadlight (type C)

5.2.1 *Bolted models*

Model LRB

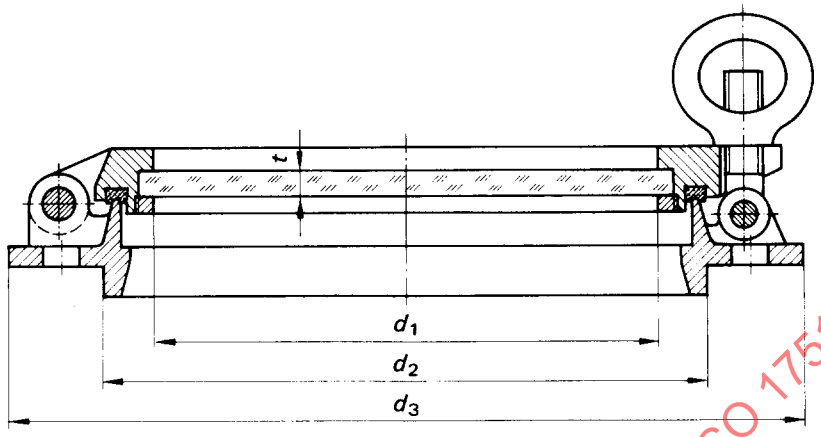


FIGURE 7 – **Opening side scuttle without deadlight, bolted**

5.2.2 *Welded models*

Model LRW

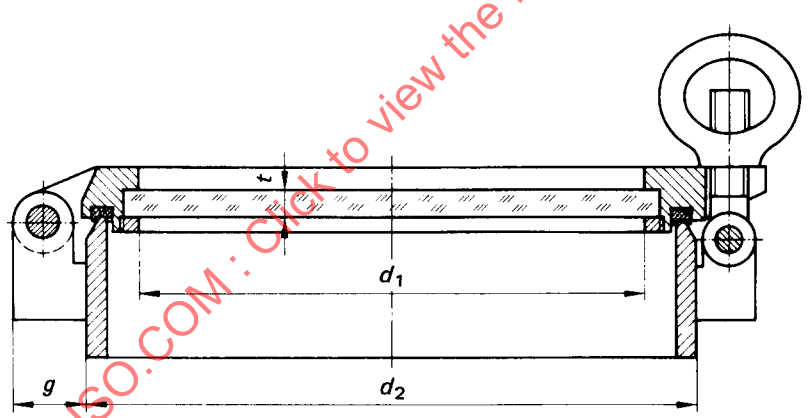


FIGURE 8 – **Opening side scuttle without deadlight, welded**

TABLE 5 – **Opening side scuttles without deadlight**

Dimensions in millimetres

Type	Nominal size d_1	d_2	d_3 max.	g max.	Glass thickness t[1]	Minimum number of fasteners[2]
						glassholder
C	200	250	350	50	6	2
	250	305	400	47,5	6	2
	300	360	450	45	8	3
	350	410	500	45	8	3
	400	460	550	45	10	3
	450	510	600	45	10	3

1) In special cases a greater glass thickness shall be used for obscured glass panes. (See table 9.)

2) The number of fasteners comprises swingbolts and hinges with round hole. (See 6.4.)

5.3 Non-opening side scuttles with deadlight (types A and B)

5.3.1 *Bolted models*

Model NB

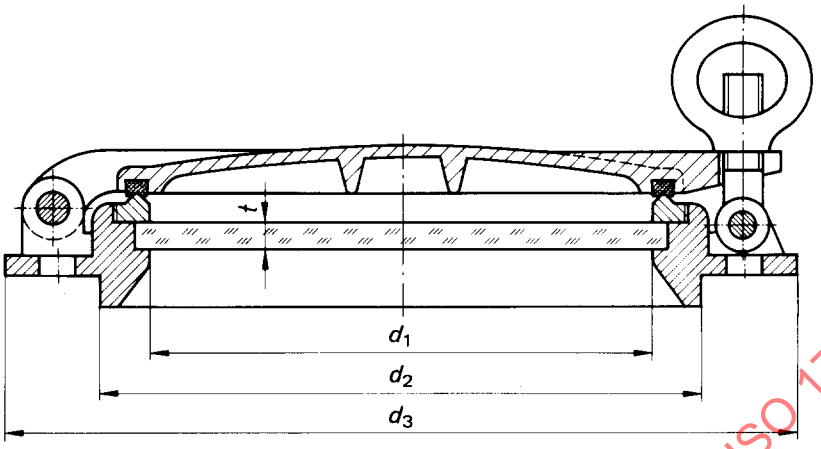


FIGURE 9 – **Non-opening side scuttle with deadlight, bolted**

5.3.2 *Welded models*

Model NW

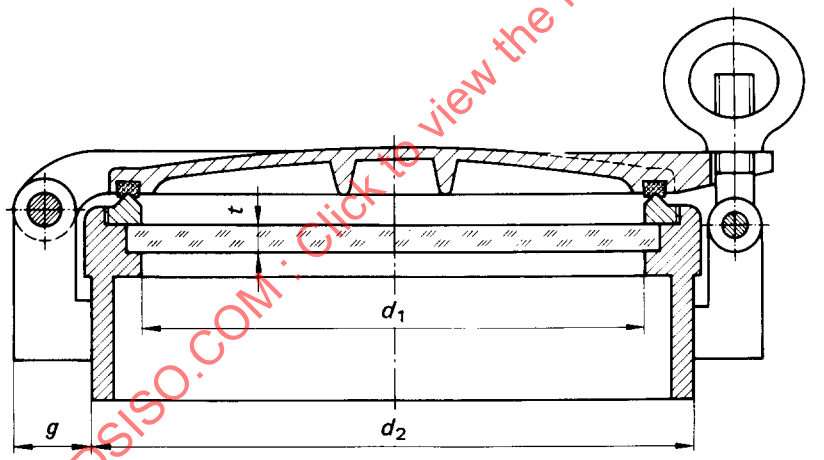


FIGURE 10 – **Non-opening side scuttle with deadlight, welded**

TABLE 6 – **Non-opening side scuttles with deadlight**

Dimension in millimetres

Type	Nominal size d_1		d_2	d_3 max.	g max.	Glass thickness t[1]		Minimum number of fasteners[2] deadlight	
						type A	type B	type A	type B
A and B	200	200	250	350	50	10	8	2	2
	250	250	305	400	47,5	12	8	3	2
	300	300	360	450	45	15	10	3	2
	350	350	410	500	45	15	12	3	3
	400	400	460	550	45	19	12	3	3
B	–	450	510	600	45	–	15	–	3

1) In special cases a greater glass thickness shall be used for obscured glass panes. (See table 9.)

2) The number of fasteners comprises swingbolts and hinges with round hole. (See 6.4.)

5.4 Non-opening side scuttles without deadlight (type C)

5.4.1 *Bolted models*

Model NB

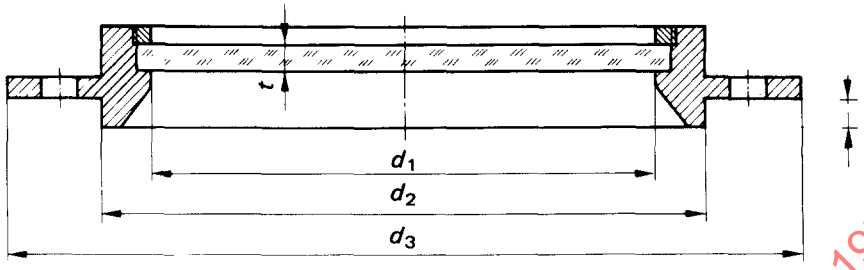


FIGURE 11 – **Non-opening side scuttle without deadlight, bolted**

5.4.2 *Welded models*

Model NW

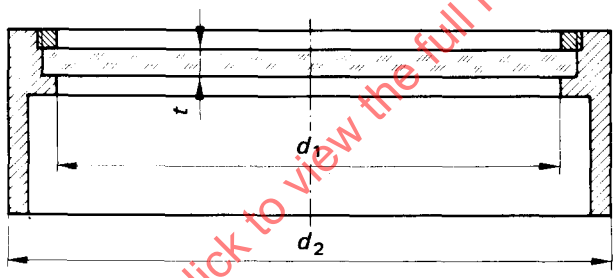


FIGURE 12 – **Non-opening side scuttle without deadlight, welded**

TABLE 7 – **Non-opening side scuttles without deadlight**

Dimension in millimetres

Type	Nominal size d_1	d_2	d_3 max.	Glass thickness t [1)]
C	200	250	350	6
	250	305	400	6
	300	360	450	8
	350	410	500	8
	400	460	550	10
	450	510	600	10

1) In special cases a greater glass thickness shall be used for obscured glass panes. (See table 9.)

6 DESIGN AND CONSTRUCTION

6.1 General

The side scuttles shall be manufactured to the main dimensions given in clause 5 as well as to the additional requirements given in 6.2 to 6.5 and from the materials specified in clause 7.

The completed side scuttles, main frames, glassholders, deadlights and all other components shall be capable of meeting the test requirements specified in clause 8.

6.2 Glazing

6.2.1 *Glass recess*

The diameters of the glass recess, d_4, in the glassholder of opening side scuttles and in the main frame of non-opening side scuttles shall be as given in table 8.

6.2.2 *Glass retaining ring*

For fixing the glass pane a threaded glass retaining ring shall be provided with an inner diameter corresponding to the clear light diameter, d_1, of the side scuttle. The dimension d_5 of the thread shall be as given in table 8.

6.2.3 *Glazing material*

An appropriate glazing material resistant to sea water and ultraviolet light shall be used. (See figure 13.)

6.2.4 *Mounting*

When glazing, it is essential that the glass pane is centralized in the glassholder of opening side scuttles or in the main frame of non-opening side scuttles so that there is the same clearance all round. (See figure 13.)

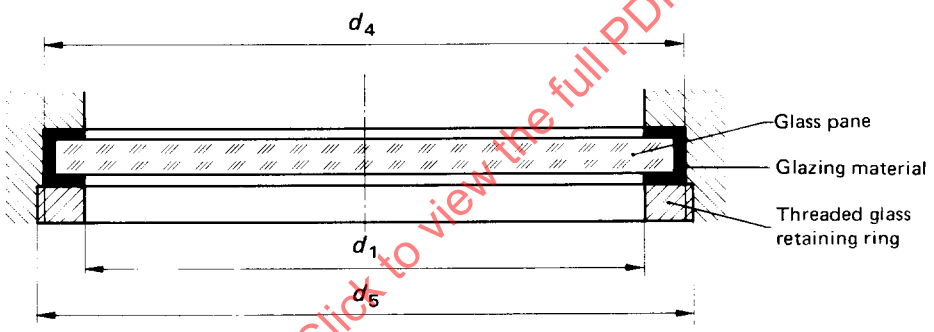


FIGURE 13 — **Fixing of glass pane**

TABLE 8 — **Mounting dimensions for the glass pane**

Dimensions in millimetres

Nominal size d_1	200	250	300	350	400	450
Recess d_4	217	267	322	372	422	472
Thread d_5	M220×2	M270×2	M325×2	M375×2	M425×2	M475×2

TABLE 9 — **Thickness of obscured glass panes when the obscured surface is facing inwards**

Dimensions in millimetres

Nominal size d_1	Thickness t of glass pane for side scuttle type		
	A	B	C
200	15	12	10
250	19	12	10
300	–	15	12
350	–	19	12
400	–	19	15
450	–	–	15

6.3 Glass panes

Toughened safety glass panes according to ISO 1095 shall be used.

For fire resistant glass panes see ISO 5797.

When an obscured toughened safety glass pane is fixed with the obscured surface facing inwards, a greater thickness than that specified in tables 4 to 7 shall be used. (See table 9.) These thicknesses have to be especially arranged when ordering the side scuttles.