

INTERNATIONAL STANDARD 3903

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

Shipbuilding — Ships' ordinary rectangular windows

Construction navale — Fenêtres rectangulaires de type courant pour 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 3903 was developed by Technical Committee ISO/TC 8, *Shipbuilding*, and was circulated to the member bodies in October 1975.

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

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India
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Shipbuilding — Ships' ordinary rectangular windows

0 INTRODUCTION

This International Standard is based on the experience of window and glass manufacturers, shipbuilders and authorities who apply to ships the Regulations of the International Convention for the Safety of Life at Sea, 1960¹⁾ 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' ordinary rectangular windows.

2 REFERENCES

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

ISO 3254, *Shipbuilding — Toughened safety glass panes for ships' rectangular windows.*

ISO 3434, *Shipbuilding — Heated glass panes for ships' windows.*

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

ISO 5779, *Shipbuilding — Ships' rectangular windows — Positioning.*²⁾

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

ISO 5896, *Shipbuilding — Ships' rectangular windows — Installation.*³⁾

3 DEFINITIONS

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

3.1 ships' ordinary rectangular window : An opening hinged window or non-opening window made of metallic

material having an undivided glass pane with dimensions and of materials according to ISO 3254, which is used in ships in accordance with the relevant regulations. (See clause 11.)

NOTE — All other kinds of rectangular windows, for example non-opening very light type with main frame of Z-shaped profile, sliding windows, wide-vision windows, fanlight windows, bottom-hinged windows and other special types, do not belong, in the sense of this International Standard, to the type "ships' ordinary rectangular window".

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

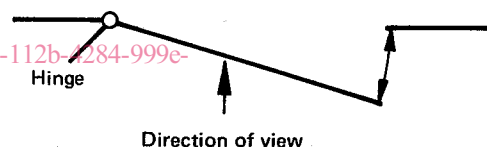


FIGURE 1 — Left-hand window

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

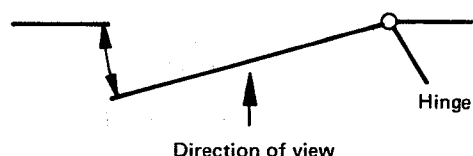


FIGURE 2 — Right-hand window

3.1.3 top hinged model (T) : An opening model with hinges of the glassholder on the top.

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 rectangular windows is given in table 1. (See figures 3 and 4.)

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

3.2.1 Opening window

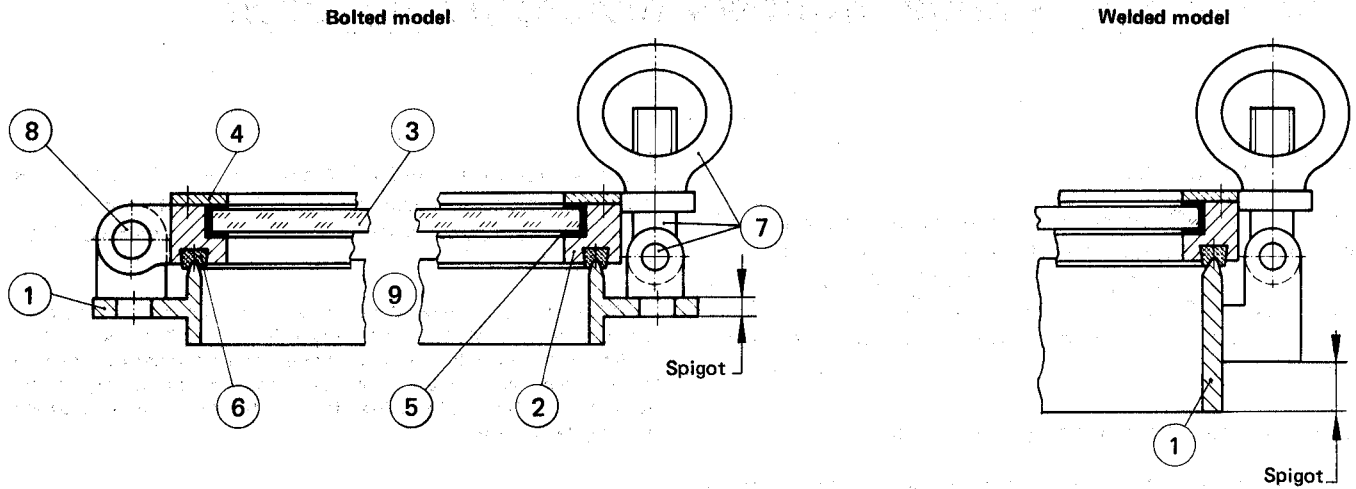


FIGURE 3 – Opening window
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3.2.2 Non-opening window

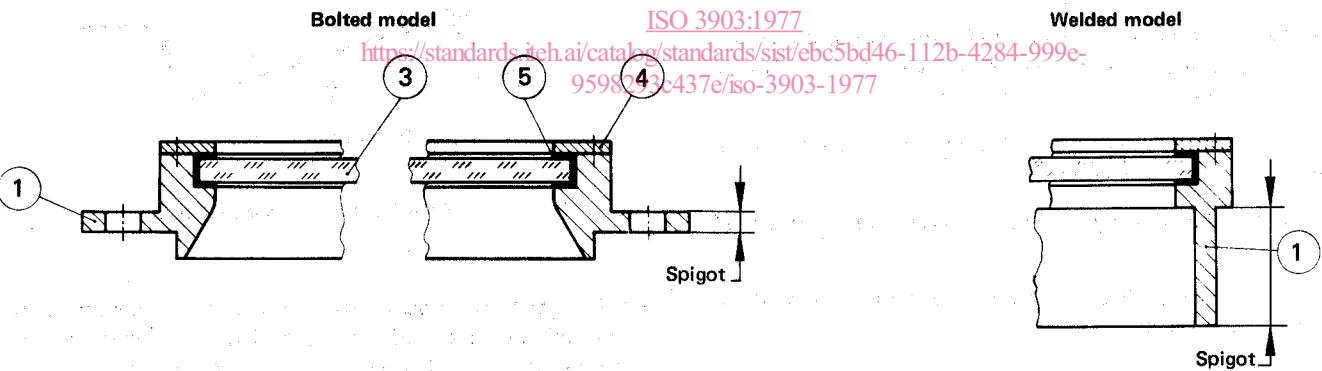


FIGURE 4 – Non-opening window

TABLE 1 – Components

Component No.	Denomination of main components
1	Main frame
2	Glassholder
3	Glass pane
4	Glass retaining frame
5	Glazing material
6	Gasket (for glassholder)
7	Closing device (for example swingbolt with nut and pin)
8	Hinge pin
9	Fixing device (see 6.6)

4 CLASSIFICATION

Windows 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 windows, see 5.1 to 5.4.

4.1 Types

- Type E : heavy-type window;
- Type F : light-type window.

NOTE — The differentiation between the types E and F is derived from the thickness of the glass pane (tables 4 to 11) and the tensile strength and elongation of the material for the main components (tables 16 and 17).

4.2 Models

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

4.3 Nominal sizes

The nominal sizes are the clear light dimensions for width w_1 and height h_1 of the window and are identified by number. (See table 3.)

5 MAIN DIMENSIONS

The main dimensions of a window shall be as given in the tables 4 to 11.

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	Opening direction	Further attributes	Fastening		
			bolted (B)	welded (W)	
			Code for designation of model		
Opening	inwards	side hinged	left-hand (L)	ILB	ILW
			right-hand (R)	IRB	IRW
		Top hinged (T)	ITB	ITW	
	outwards	side hinged	left-hand (L)	OLB	OLW
			right-hand (R)	ORB	ORW
		—	—	NOB	NOW

TABLE 3 — Nominal sizes

Dimensions in millimetres

No.	Window		r_1
	nominal size $w_1 \times h_1$		
	Type E	Type F	
1	300 × 425		50
2	355 × 500		50
3	400 × 560		50
4	450 × 630		100
5	500 × 710		100
6	560 × 800		100
7	900 × 630		100
8	1 000 × 710		100
9	—	1 100 × 800	100

Window No. 1 to 6

Window No. 7 to 9

5.1 Inwards opening side-hinged windows

5.1.1 Bolted models

Model ILB – Left-hand opening

Model IRB – Right-hand opening

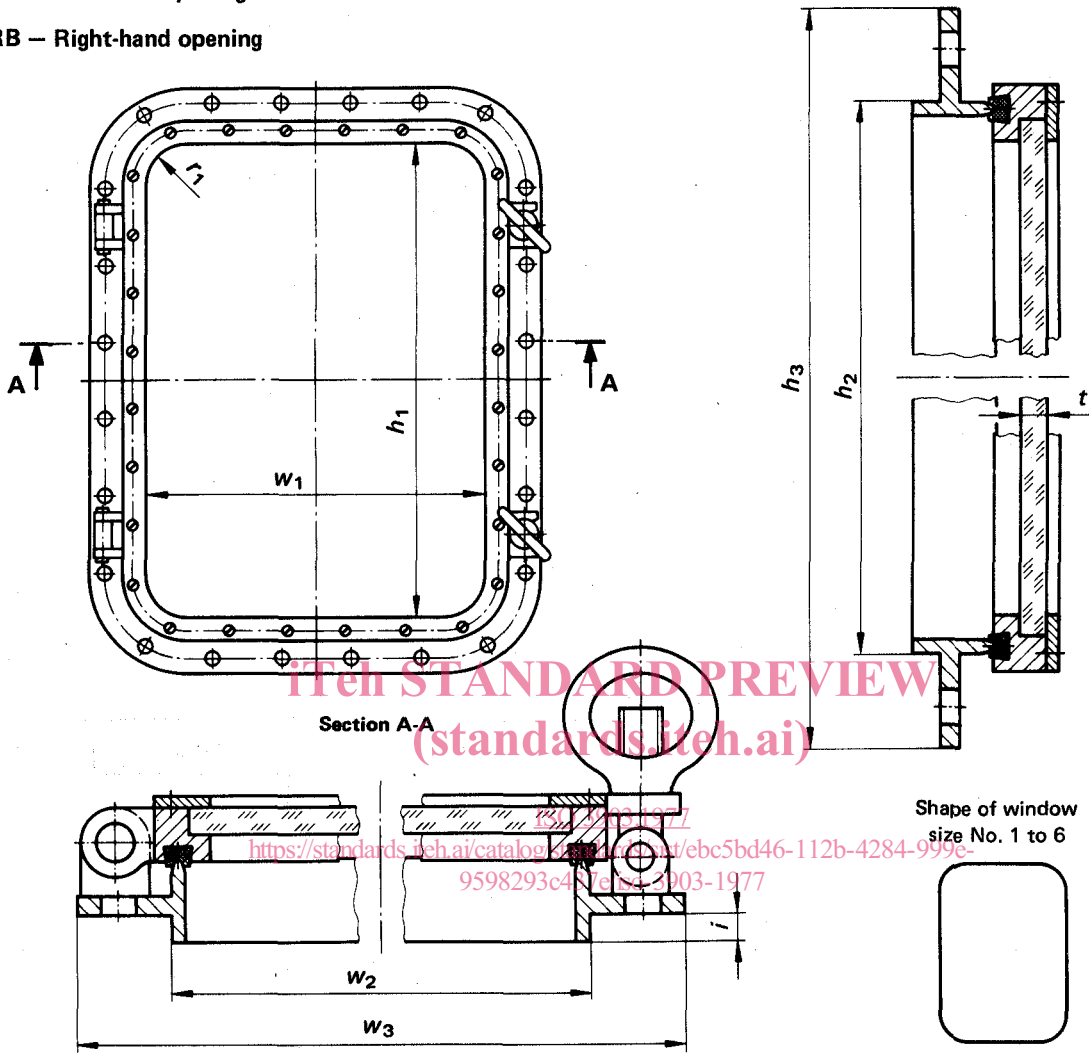


FIGURE 5 – Window of models ILB and IRB

TABLE 4 – Models ILB and IRB

Dimensions in millimetres

Window		Main frame				$r_1^{1)}$	Glass thickness $t^{2)}$		Minimum total number of fasteners ³⁾
No.	Nominal size	Spigot		Flange			type		
types E and F	$w_1 \times h_1$	w_2	h_2	w_3 max.	h_3 max.		E	F	
1	300 × 425	348	473	430	555	50	10	8	4
2	355 × 500	403	548	485	630	50	10	8	4
3	400 × 560	448	608	530	690	50	12	8	4
4	450 × 630	498	678	580	760	100	12	8	4
5	500 × 710	548	758	630	840	100	15	10	6
6	560 × 800	608	848	690	930	100	15	10	6

1) See also 5.5.

2) In special cases a greater glass thickness shall be used for obscured glass panes. (See table 13.)

3) The minimum total number of fasteners comprises closing devices and hinges with round holes for the glassholder. (See 6.4.)

5.1.2 Welded models

Model ILW – Left-hand opening

Model IRW – Right-hand opening

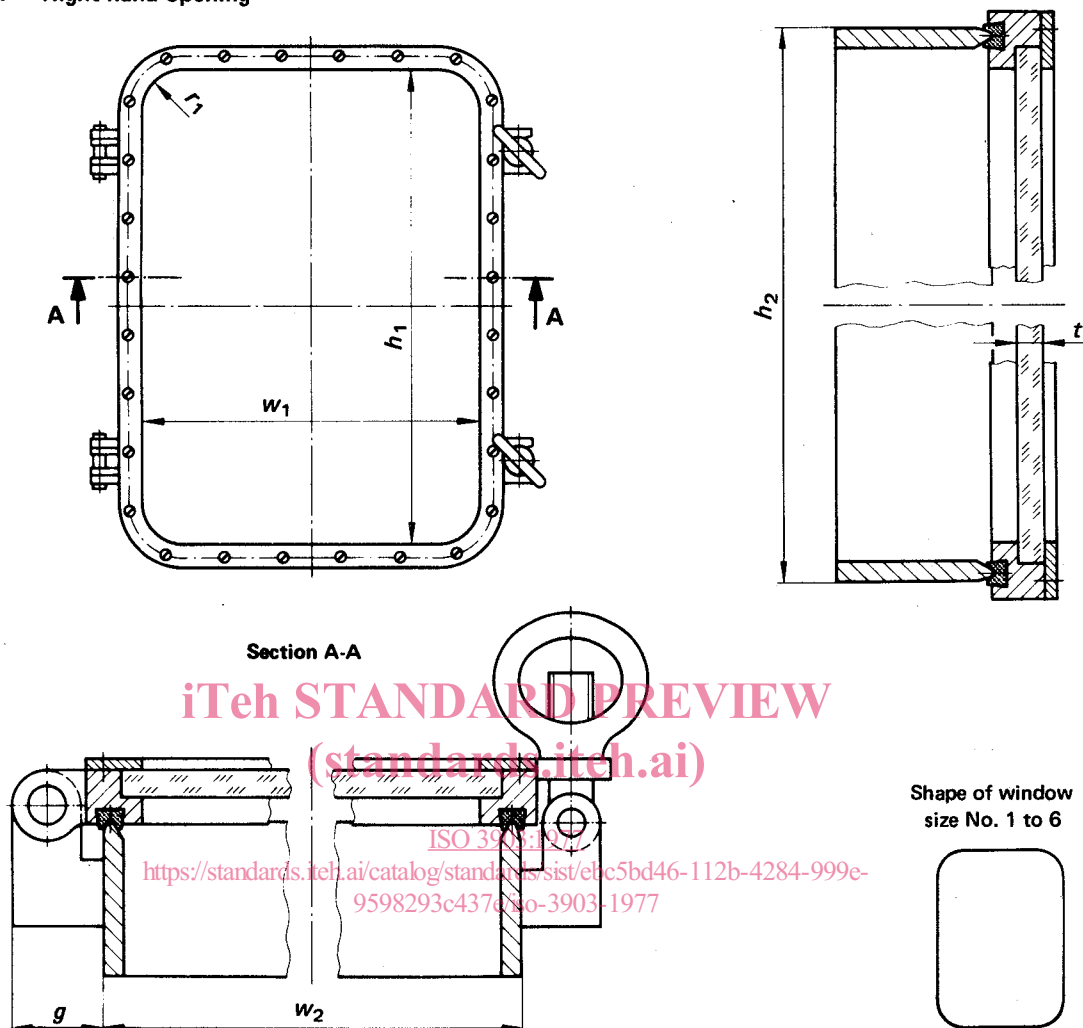


FIGURE 6 – Window of models ILW and IRW

TABLE 5 – Models ILW and IRW

Dimensions in millimetres

Window		Main frame		g max.	r ₁ ¹⁾	Glass thickness t ²⁾		Minimum total number of fasteners ³⁾
No.	Nominal size	w ₂	h ₂			type		
types E and F	w ₁ × h ₁					E	F	
1	300 × 425	348	473	41	50	10	8	4
2	355 × 500	403	548	41	50	10	8	4
3	400 × 560	448	608	41	50	12	8	4
4	450 × 630	498	678	41	100	12	8	4
5	500 × 710	548	758	41	100	15	10	6
6	560 × 800	608	848	41	100	15	10	6

1) See also 5.5.

2) In special cases a greater glass thickness shall be used for obscured glass panes. (See table 13.)

3) The minimum total number of fasteners comprises closing devices and hinges with round holes for the glassholder. (See 6.4.)

5.2 Inwards opening top-hinged windows

5.2.1 Model ITB – Bolted window

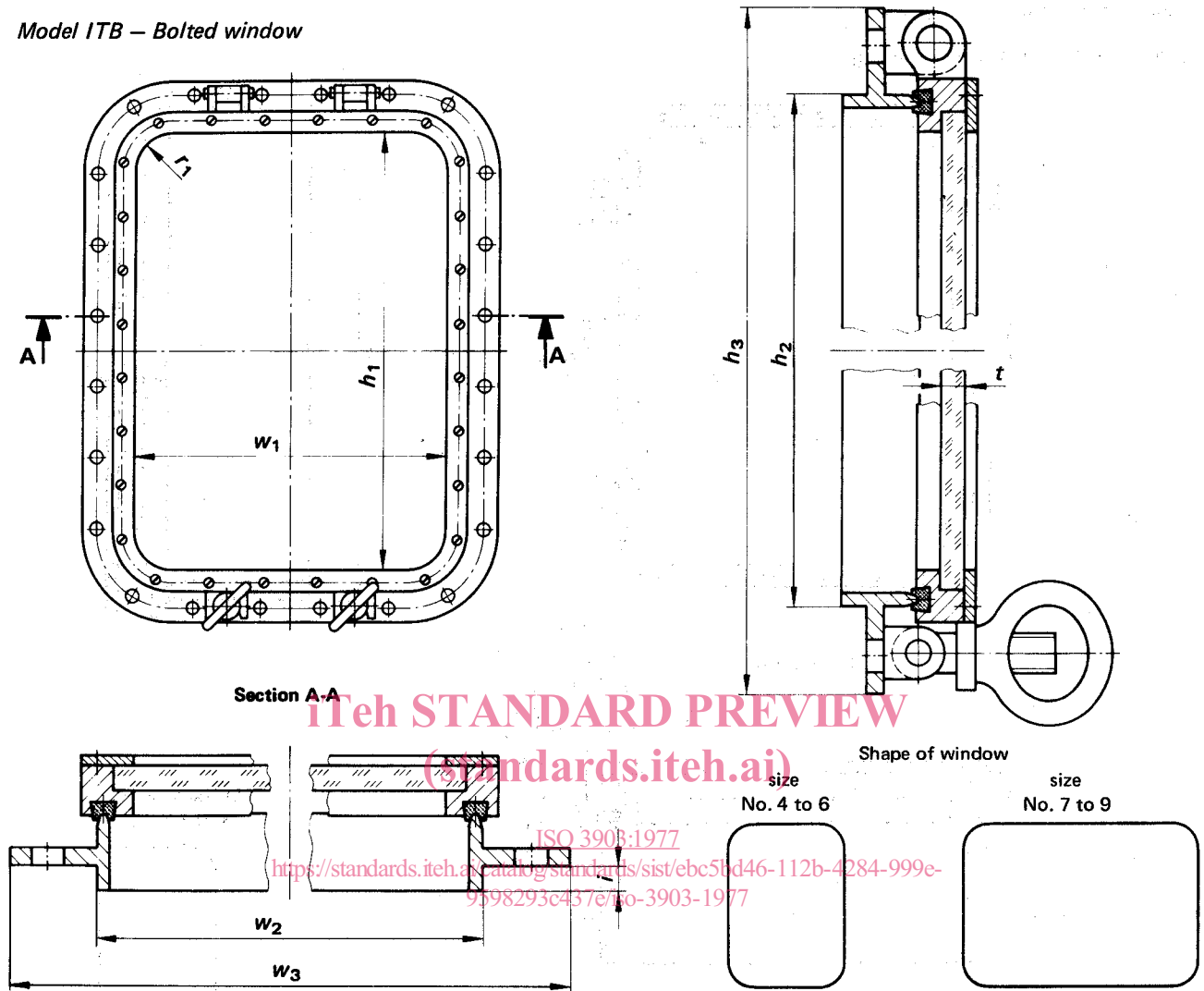


FIGURE 7 – Window of model ITB

TABLE 6 – Model ITB

Dimensions in millimetres

Window		Main frame				r_1 ¹⁾	Glass thickness t ²⁾		Minimum total number of fasteners ³⁾
No.	Nominal size $w_1 \times h_1$	Spigot		Flange			type		
		w_2	h_2	w_3 max.	h_3 max.		E	F	
4	450 × 630	498	678	580	760	100	12	8	4
5	500 × 710	548	758	630	840	100	15	10	6
6	560 × 800	608	848	690	930	100	15	10	6
7	900 × 630	948	678	1 030	760	100	19	12	6
8	1 000 × 710	1 048	758	1 130	840	100	19	12	8
–	9	1 148	848	1 230	930	100	–	15	8

1) See also 5.5.

2) In special cases a greater glass thickness shall be used for obscured glass panes. (See table 13.)

3) The minimum total number of fasteners comprises closing devices and hinges with round holes for the glassholder. (See 6.4.)

5.2.2 Model ITW – Welded window

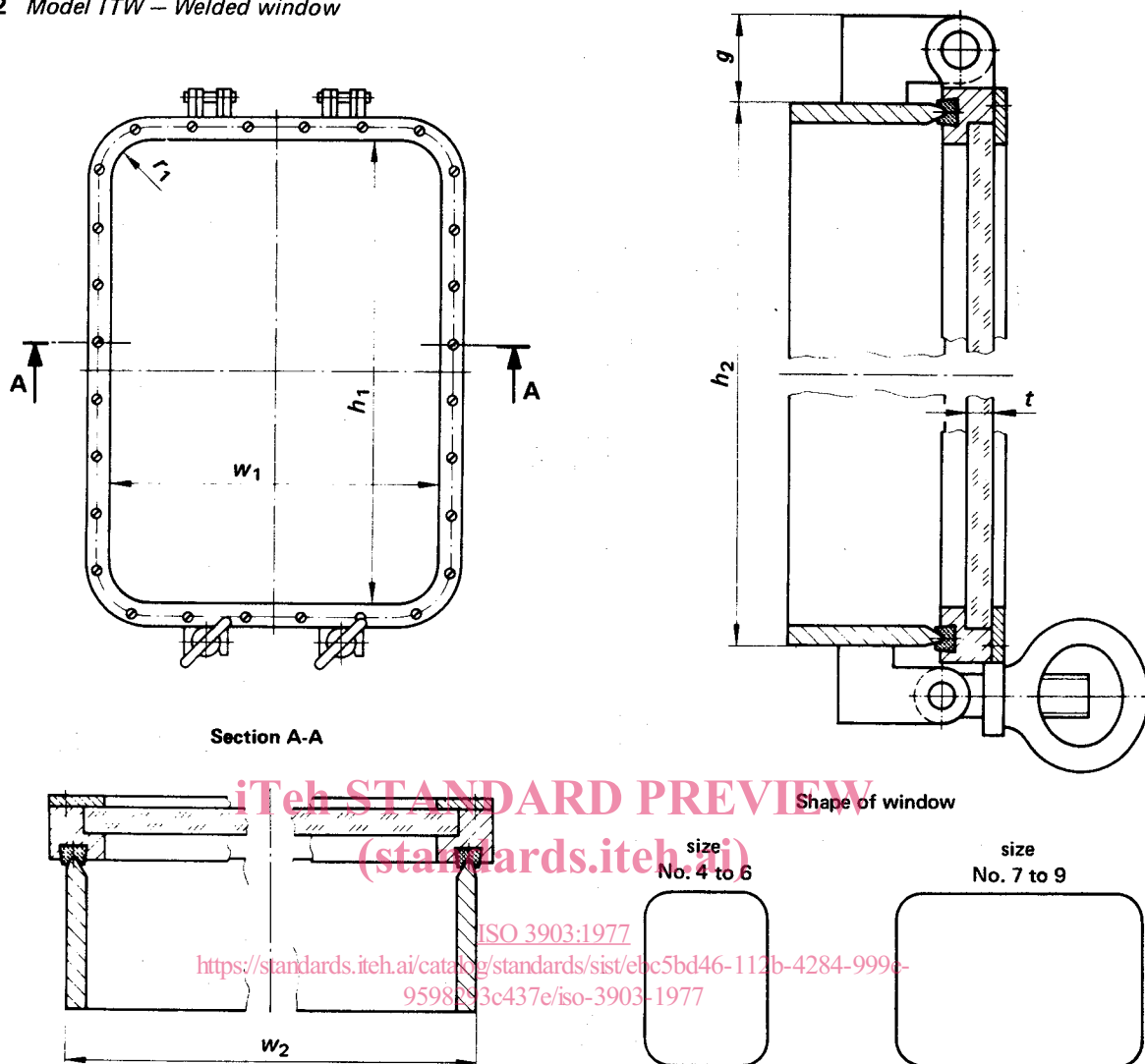


FIGURE 8 – Window of model ITW

TABLE 7 – Model ITW

Dimensions in millimetres

Window		Main frame		<i>g</i> max.	<i>r</i> ₁ ¹⁾	Glass thickness <i>t</i> ²⁾		Minimum total number of fasteners ³⁾
No.	Nominal size	<i>w</i> ₂	<i>h</i> ₂			type		
	<i>w</i> ₁ × <i>h</i> ₁					E	F	
4	450 × 630	498	678	41	100	12	8	4
5	500 × 710	548	758	41	100	15	10	6
6	560 × 800	608	848	41	100	15	10	6
7	900 × 630	948	678	41	100	19	12	6
8	1 000 × 710	1 048	758	41	100	19	12	8
–	9	1 100 × 800	1 148	848	41	–	15	8

1) See also 5.5.

2) In special cases a greater glass thickness shall be used for obscured glass panes. (See table 13.)

3) The minimum total number of fasteners comprises closing devices and hinges with round holes for the glassholder. (See 6.4.)