

Manual
on
Door and Window Details
for Residential Buildings

Volume-1



Govt. of India
Central Public Works Department

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NIRMAN BHAWAN. NEW DELHI-110001

May 11, 2006

FOREWORD

I am glad to learn that CPWD has standardised the sizes of door and window in government residential buildings and for dissemination of this information, the organisation is bringing out a manual.

Standardisation of fittings and fixtures should not only lead to qualitative improvement of the buildings, but also reduce the cost of construction due to economies of scale in production of these items. In the present competitive environment, this is a step in the right direction. I am confident that CPWD would continue to innovate in this manner to give good value for money, to its customers.

I congratulate the officers of the CPWD to have brought out such a user friendly and comprehensive document and trust that the field officers will find it useful.



Secretary

Ministry of Urban Development

PREFACE

The committee on Standardization of Doors and Window sizes for Residential Buildings consisting of experts from CPWD, Confederation of Construction Products and Services (CCPS) and IBC (Indian Building Congress) submitted a report to the MoUD for acceptance. The MoUD has accepted the report and advised that these sizes be adopted by CPWD and adequately publicised among the major construction agencies and the industry, for their adoption

Subsequently a need was felt to compile all possible window/door details in various materials and to prepare a working manual for the use of field engineers, architects and other agencies engaged in design and construction activities.

This manual has been prepared specifically for use in the construction of residential buildings. It is hoped that the manual will be a useful reference material.



DG(W), CPWD

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ABBREVIATIONS USED IN THE DRAWINGS

Doors and Windows shall be designated by the following letters

W for **Window**

D For **Door**

The Material of the Doors/Windows shall be designated as

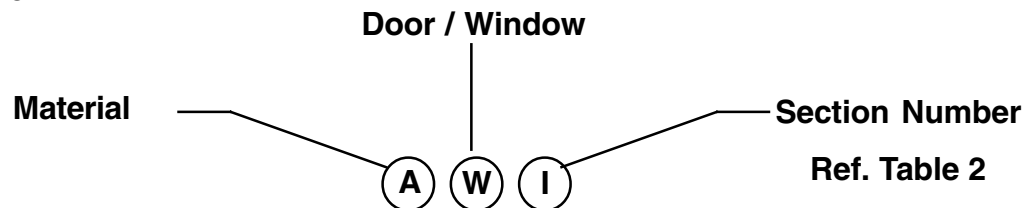
A for **Aluminium**

W for **Wood**

S for **Steel**

The various sections shall be marked in reference to Fig.7, 8, 9 and 16

For Example



A W I would mean **Aluminium Window Detail at Section 1**

W D 5 would mean **Wooden Door Detail at Section 5**

W W I would mean **Wooden Window Detail at Section 1**

S W 2 would mean **Steel Window Detail at Section 2**

This designation will have to be marked on the Elevation of the Door/Window. Refer to Fig. 1.

EXAMPLE OF A WINDOW OF OPENING SIZE A X B

EXAMPLE ONLY

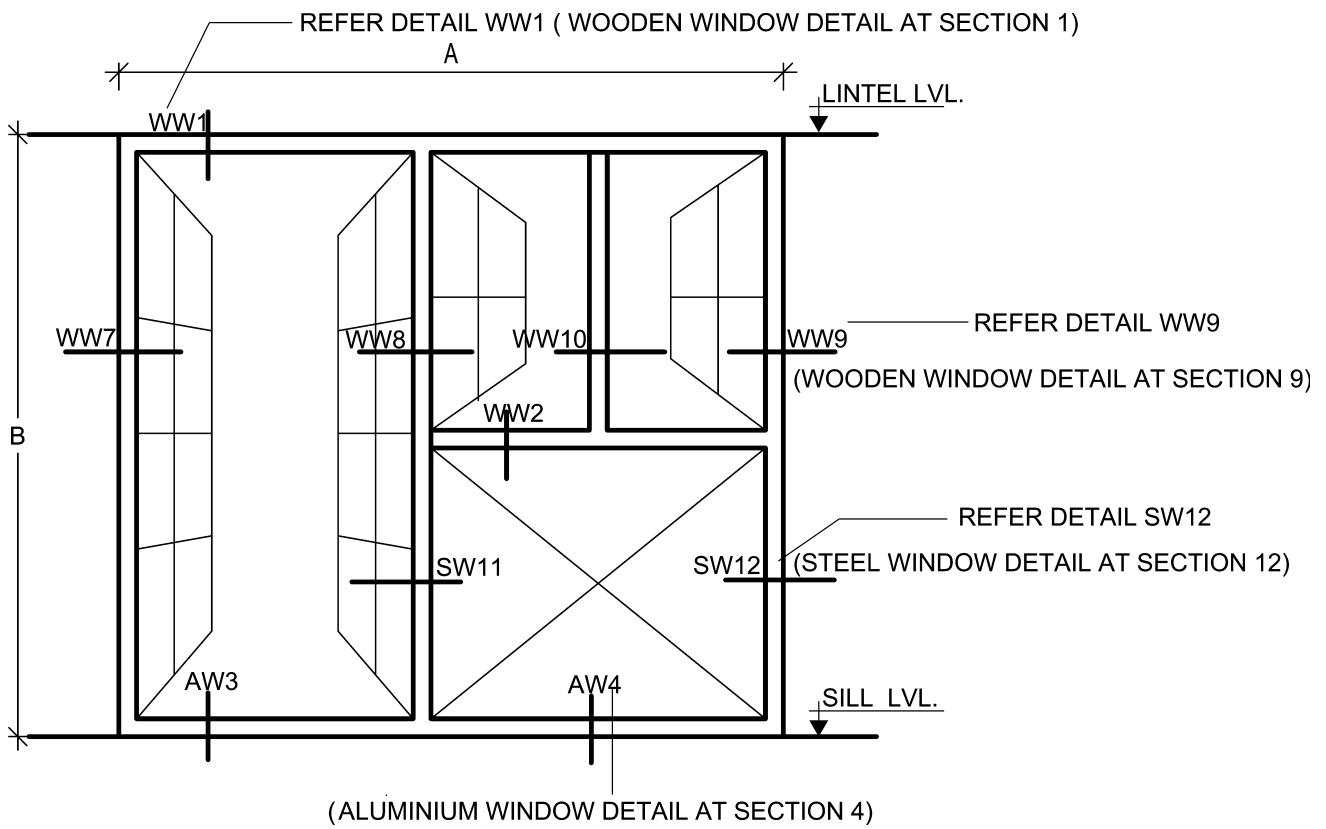


Fig. 1 : Elevation for Window of opening size A x B

TABLE-1 REVISED SPECIFICATIONS FOR RESIDENTIAL BUILDINGS

S.No.	Item	Type I to III	Type IV	Type V & VI
1.	Frames			
1a	Window	Pressed steel (Corrosion resistant coated) sheet 1.6 mm thick with double rebate.	i. Pressed steel (Corrosion resistant coated) sheet 1.6 mm thick with double rebate ii. Aluminum Sheet iii. Poly-propylene windows.	Same as type IV
1b	Doors	i. Pressed steel (Corrosion resistant coated) sheet 1.6 mm thick with single rebate ii. T-Iron iii. Precast RCC frame	i. Pressed steel (Corrosion resistant coated) sheet 1.6 mm thick with single rebate ii. Precast RCC frame	Same as type IV
2	Shutters			
2a	Window	MS tubular box section (corrosion resistant coated). Wire mesh shutters may be provided at the discretion of the Zonal CE.	i. MS tubular box section (corrosion resistant coated). ii. Aluminium. Shutter to match frame. Wire mesh shutters may be provided at the discretion of the Zonal CE.	Same as type IV
2b	Door			
2b(i)	Main Door	External door with iron grill/wire mesh Internal door 35mm panelled shutter with hard wood style and rails. Panels out of pre-laminated particle board one side decorative other side balancing.	Same as type I to type III	Same as type I to type III except that panels will be decorative on both sides.
2b(ii)	WC & Bath	Solid PVC shutter 20mm thick	Same as type I to type III	Same as type I to type III
3.	Fittings	Powder coated MS/ Stainless Steel	Powder coated MS/Stainless Steel	Same as type IV

Note: 1. If any other option of local material is available the same can be used.

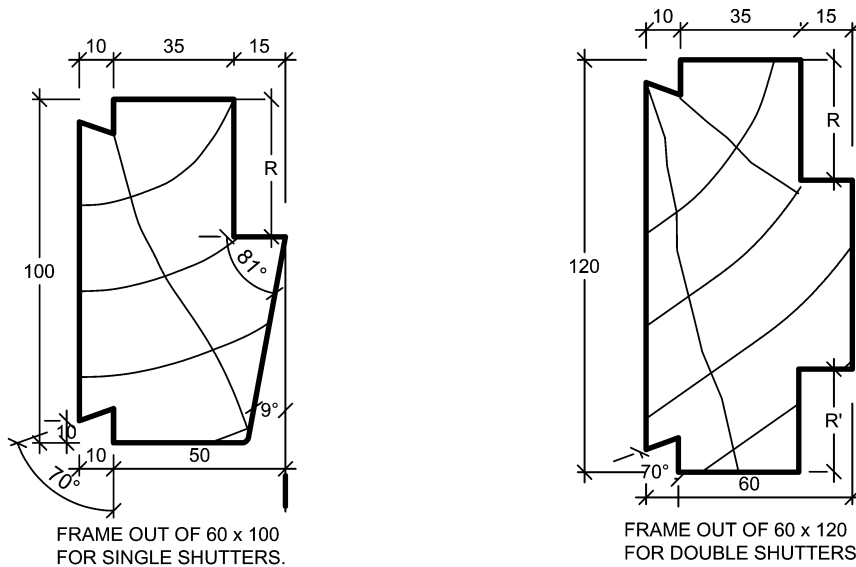
2. External sliding bolt and handles will be powder coated MS or Stainless Steel

CHAPTER 1 – WOOD

1A – WINDOW DETAILS

1B– DOOR DETAILS

TYPICAL DETAILS – WOOD



R or R' = 40,35,30 or 25 Depending Upon Shutter Thickness

Fig. 2 : Standard Sections of Wooden Windows, Doors and Ventilator Frames

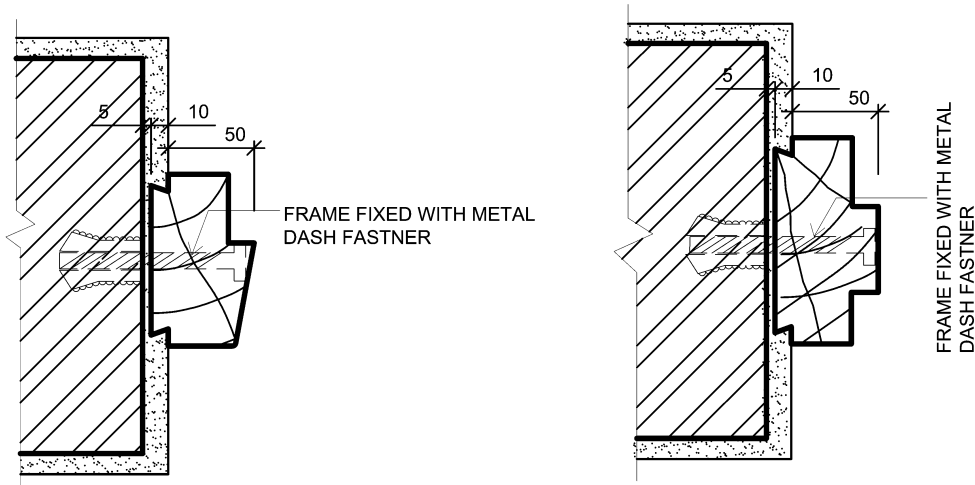


Fig. 3 : Detail of Fixing of Wooden Frame to Wall



T= THICKNESS OF SHUTTER

Fig. 4A SPLAYED TYPE

T= THICKNESS OF SHUTTER

Fig. 4B SQUARE TYPE

Fig. 4 : Meeting of Stiles for Double Leaved Shutters

TYPICAL DETAILS – WOOD

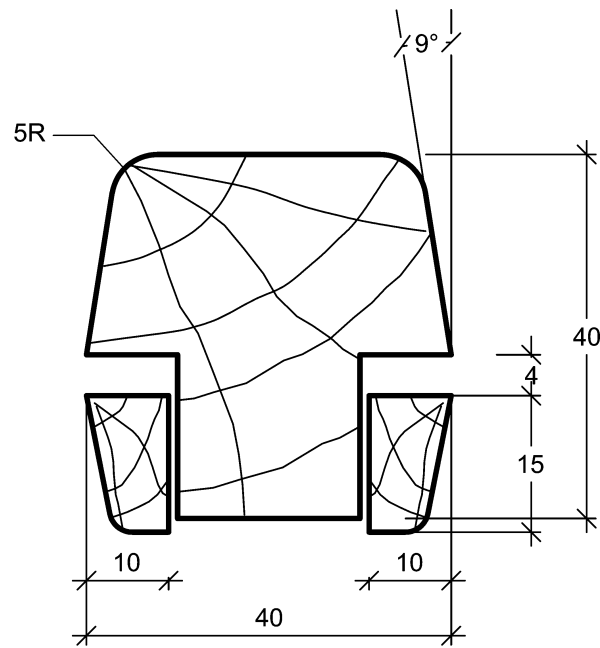


Fig. 5 Glazing/Sash Bar Detail

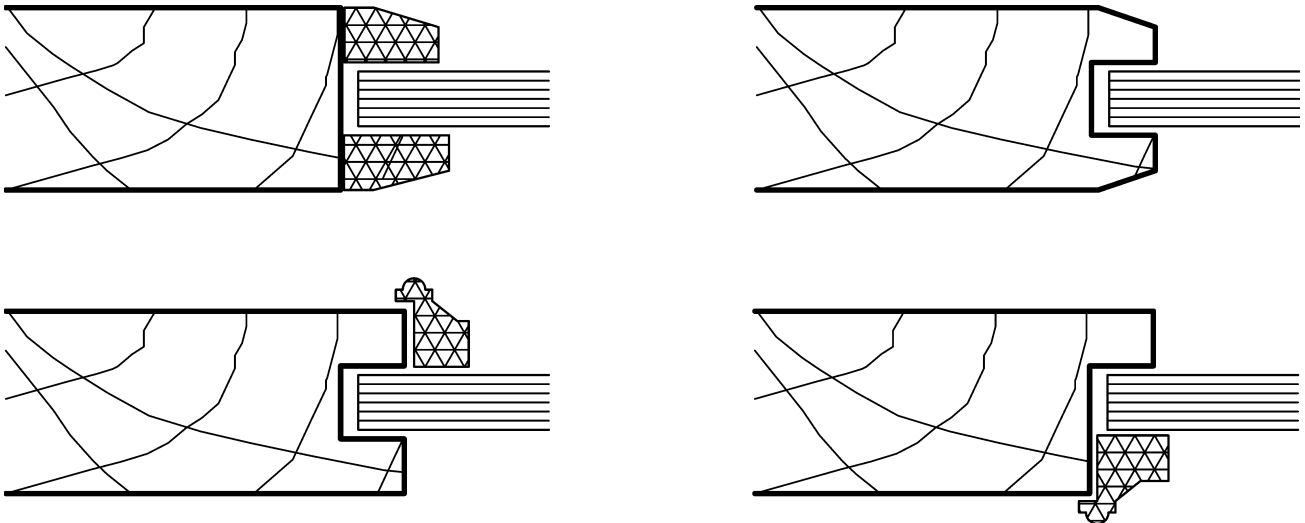


Fig. 6 Common Methods of Joining Panels with Stiles/Rails with or without Beading

CHAPTER 1A
WINDOW DETAILS

TABLE 2 – RECOMMENDED OPENING SIZES – WINDOWS

S. No.	Type	Location	Sill Height	Masonry Opening Size
1	W1	Habitable Room	750	1800 x 1350
2	W2	Habitable Room	900	1800 x 1200
3	W3	Habitable Room	750	1500 x 1350
4	W4	Habitable Room	900	1500 x 1200
5	W5	Habitable Room	750	1200 x 1350
6	W6	Habitable Room	900	1200 x 1200
7	W7	Habitable Room	750	900 x 1350
8	W8	Habitable Room	900	900 x 1200
9	W9	Habitable Room	750	600 x 1350
10	W10	Habitable Room	900	600 x 1200
11	W11	Habitable Room	750	450 x 1350
12	W12	Habitable Room	900	450 x 1200
13	W13	Kitchen	1050	900 x 1050
14	W14	Toilet	1050	600 x 1050
15	W15	Toilet	1050	450 x 1050

RECOMMENDED ELEVATION OF WINDOWS FOR FIXING COOLER/AC

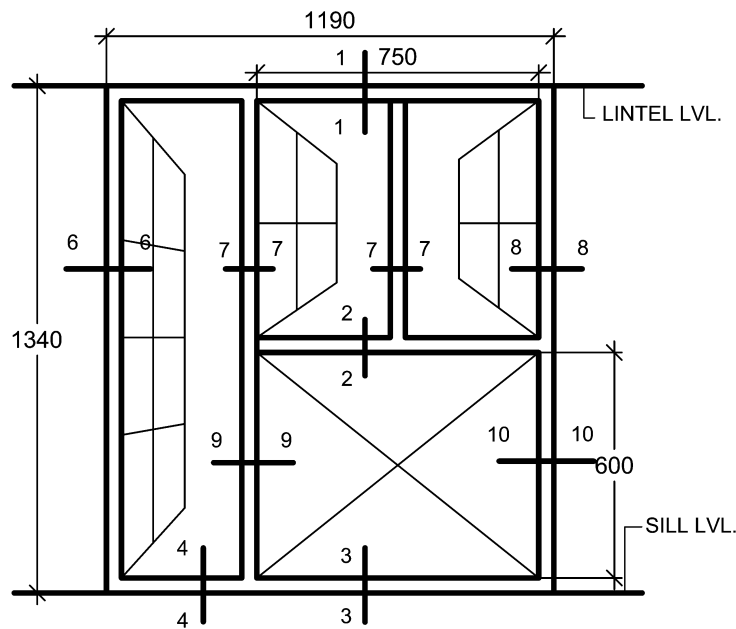


Fig. 7 : Opening Size 1200 x 1350

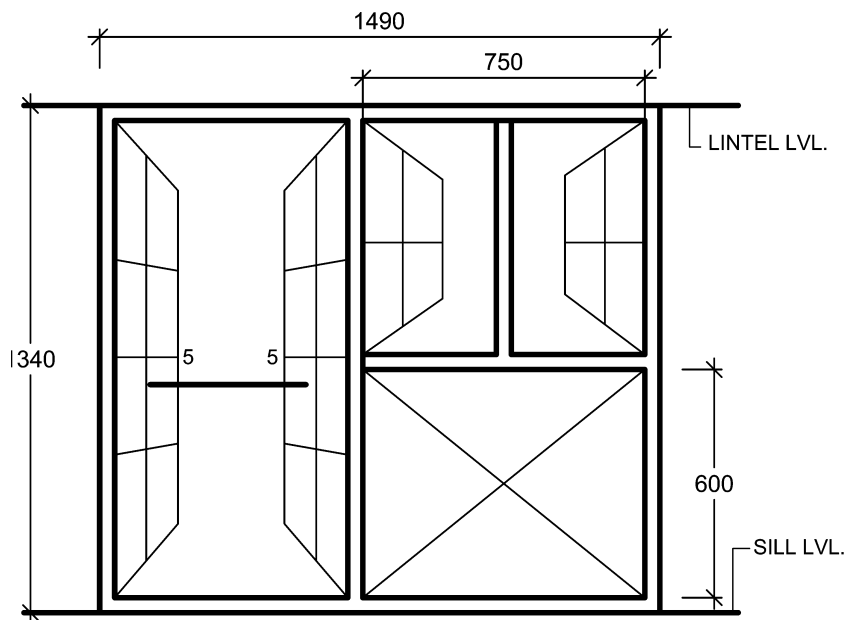


Fig. 8 : Opening Size 1500 x 1350

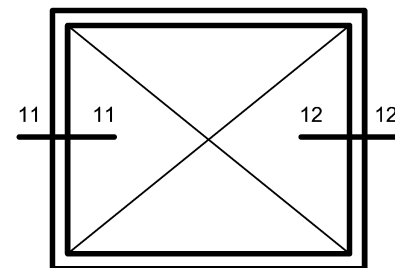


Fig. 9 : Fixed Glazing Ventilator

RECOMMENDED ELEVATION OF TOILET WINDOWS

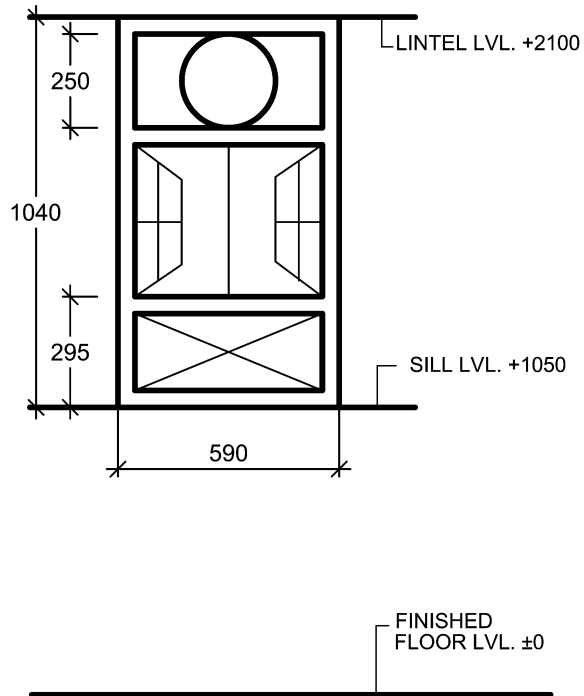


Fig. 10 : Opening Size 600 x 1050

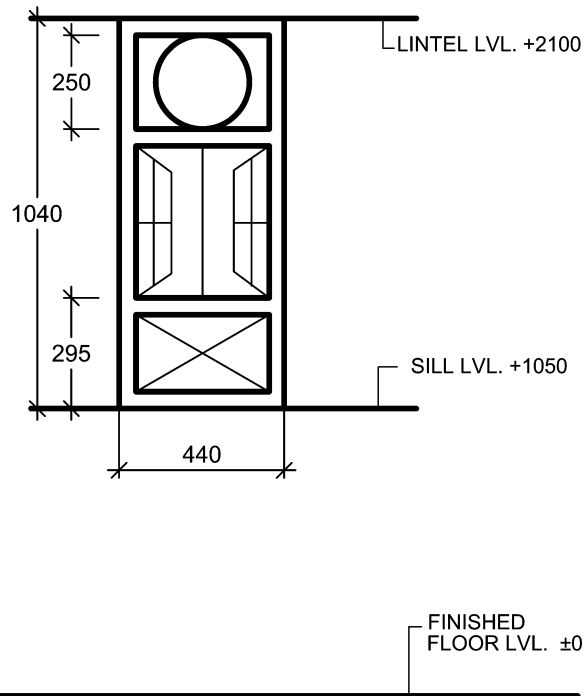


Fig. 11 : Opening Size 450 x 1050

TYPICAL WINDOW DETAILS – WOOD

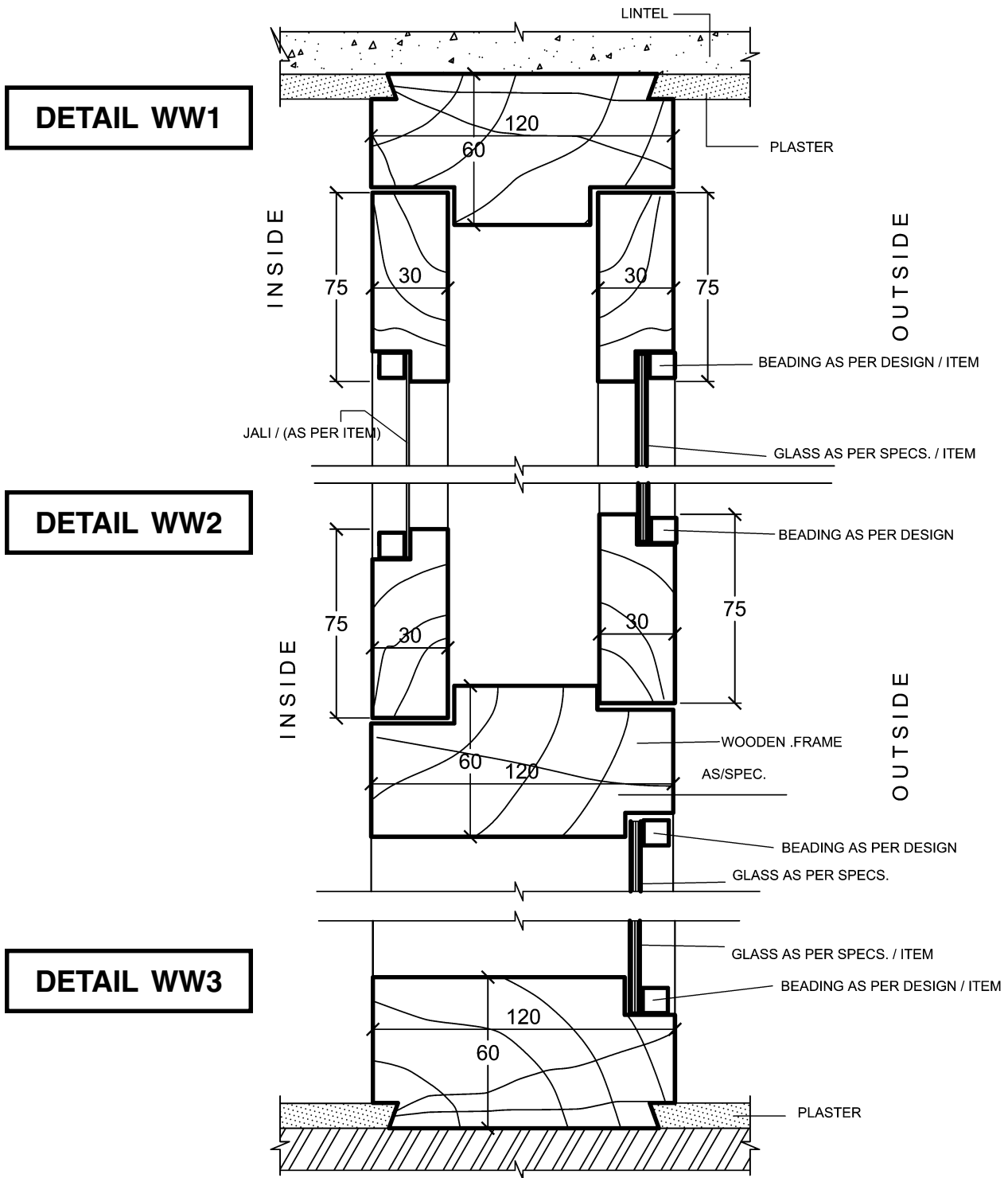
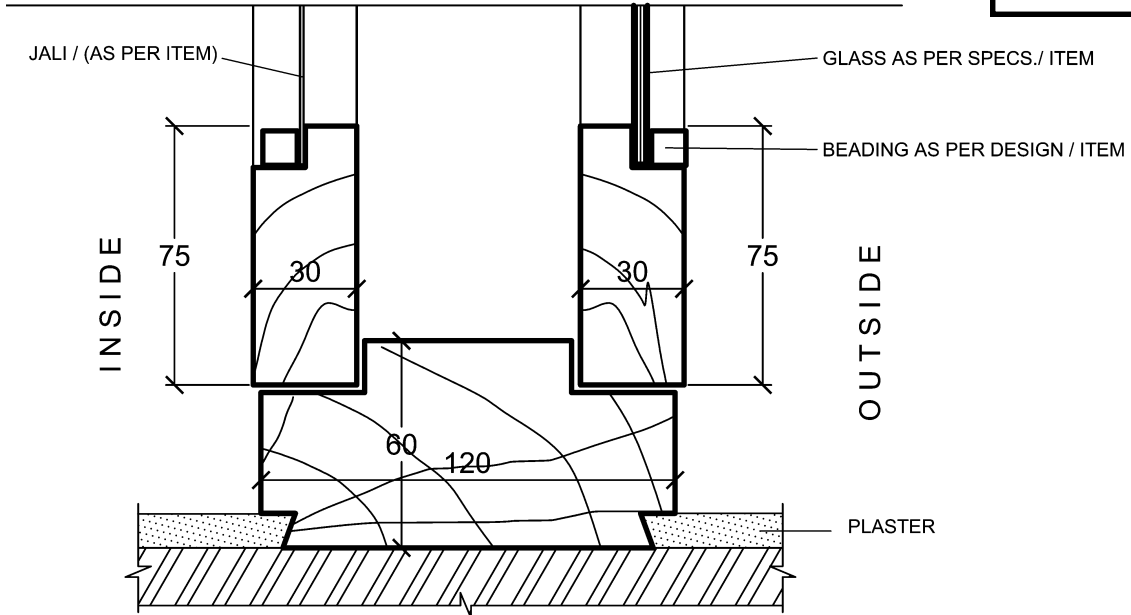


Fig. 12

TYPICAL WINDOW DETAILS – WOOD

DETAIL WW4



DETAIL WW5

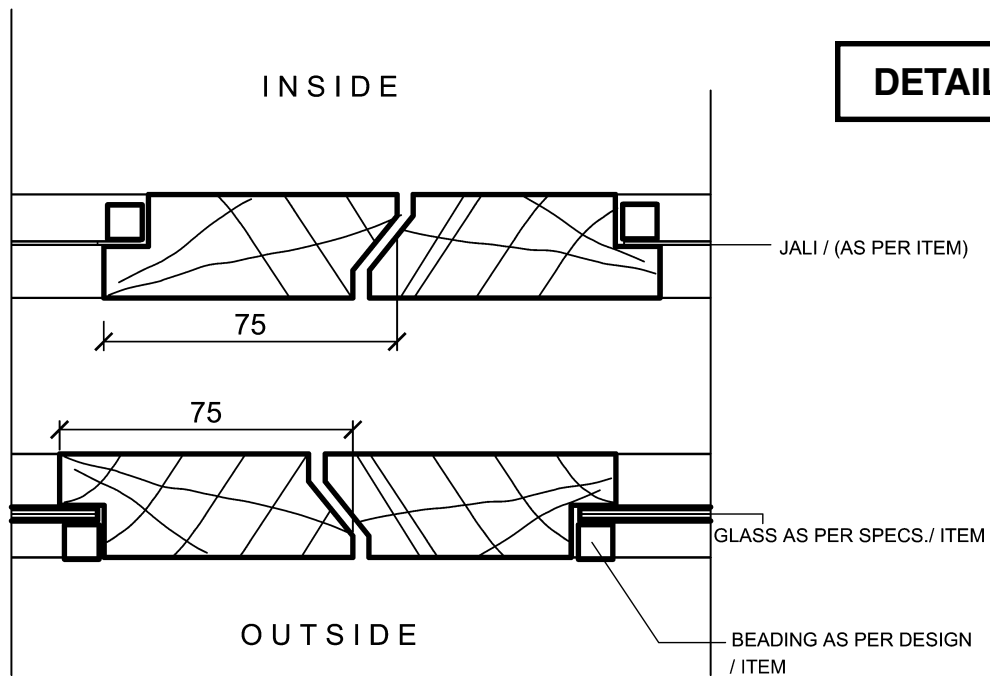


Fig. 13

TYPICAL WINDOW DETAILS – WOOD

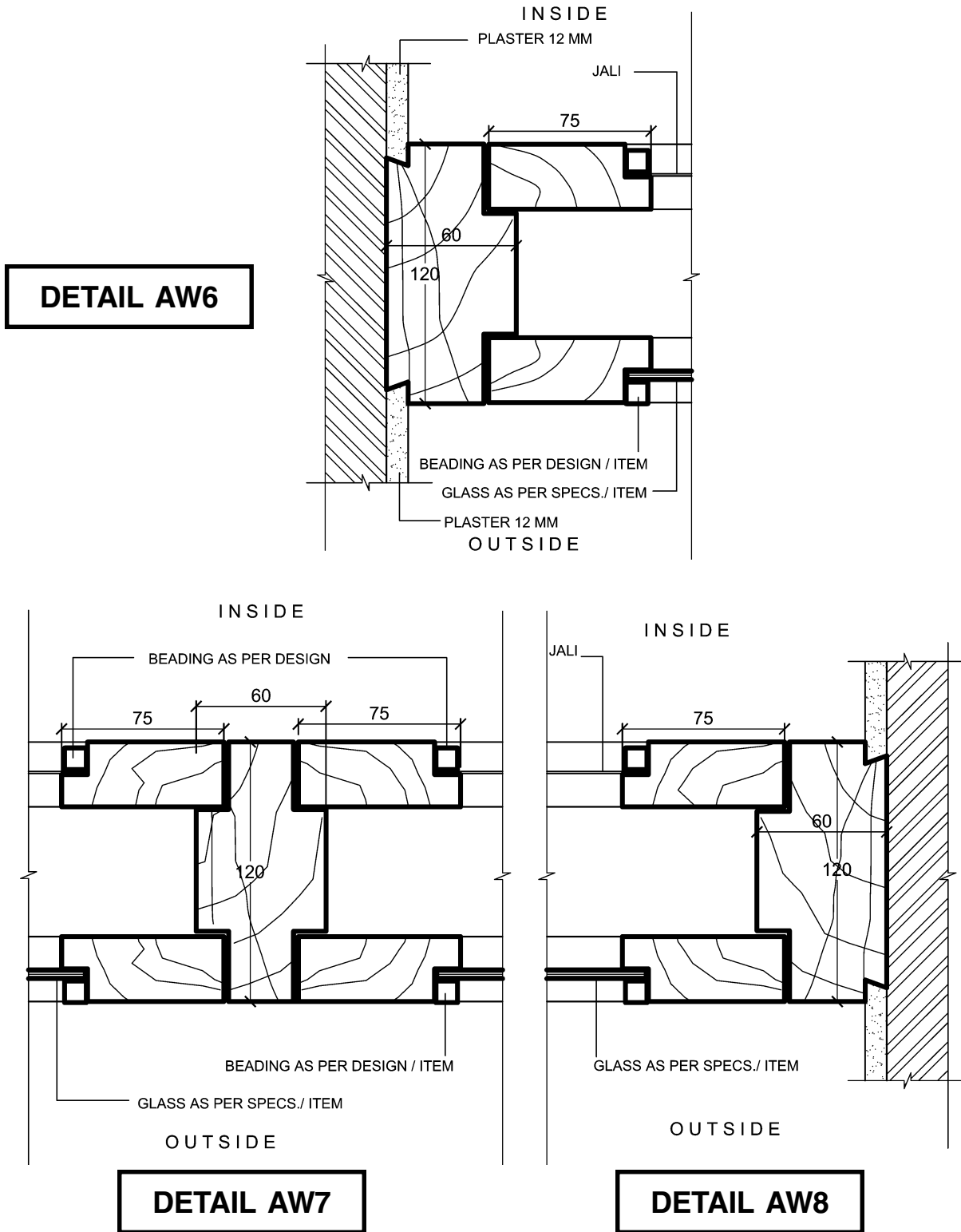


Fig. 14

TYPICAL WINDOW DETAILS – WOOD

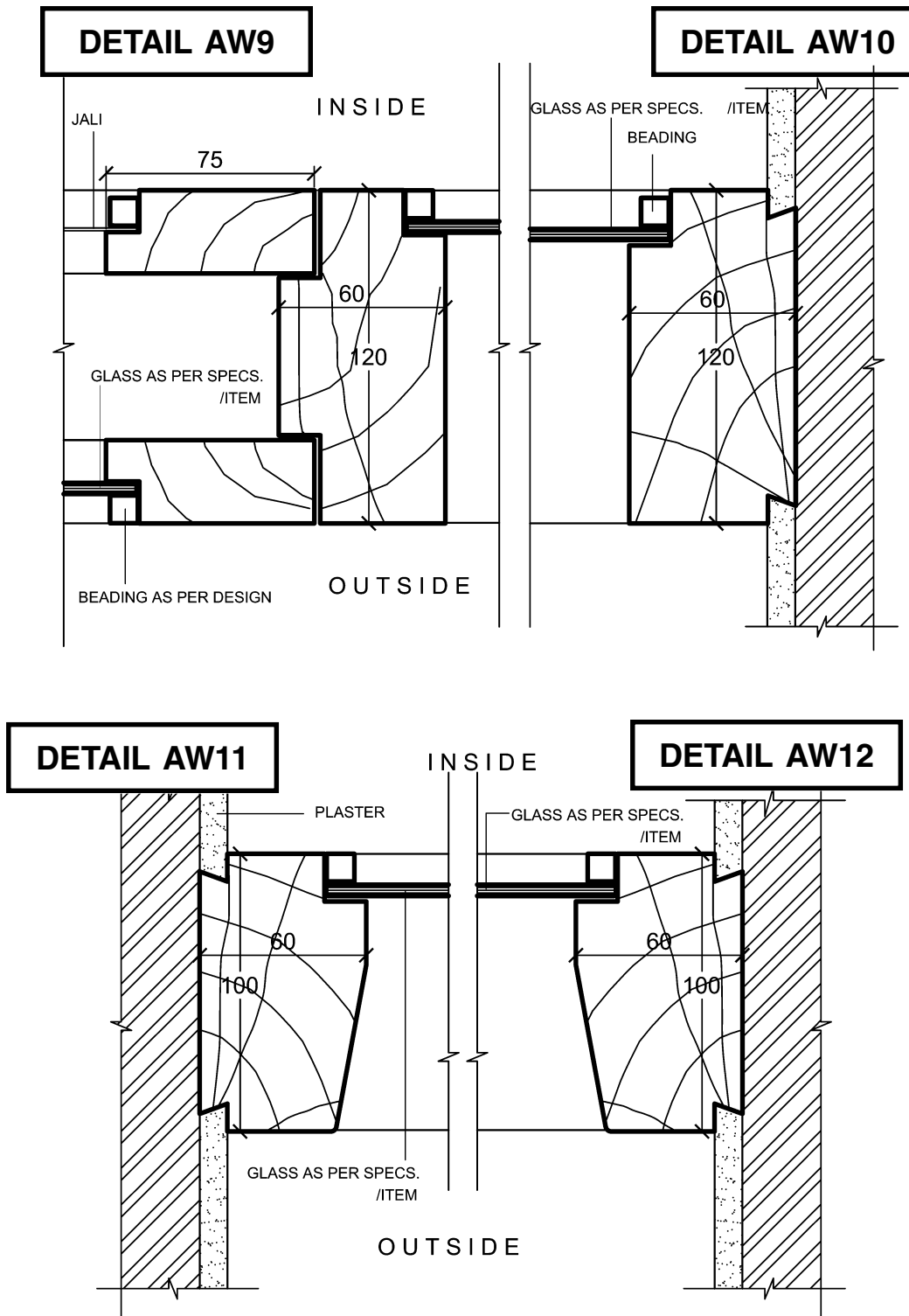


Fig. 15

CHAPTER 1B
DOOR DETAILS

TABLE 3 – RECOMMENDED OPENING SIZES – DOORS

S. No.	Type	Location	Shutter Size	Masonry Opening Size	Frame	Shutter
1	D1	Entrance Room 1	1100 x 2045	1200 x 2100	Wood	Internal Shutter - Solid Core Flush / Panel External Shutter - Grill Shutter
2	D2	Entrance Room 2	1000 x 2045	1100 x 2100	Wood	Internal Shutter - Solid Core Flush / Panel External Shutter - Grill Shutter
3	D3	Room Door 1	900 x 2045	1000 x 2100	Wood	Solid Core Flush Shutter or Panel Shutter
4	D4	Room Door 2	800 x 2045	900 x 2100	Wood	Solid Core Flush Shutter or Panel Shutter
5	D5	Kitchen & Store	800 x 2045	900 x 2100	Wood	Partly Panel and Partly Wire Mesh Shutter
6	D6	Toilet	650 x 2045	750 x 2100	Wood	1. Panel Shutter 2. Solid PVC Shutter

WOODEN DOOR ELEVATION

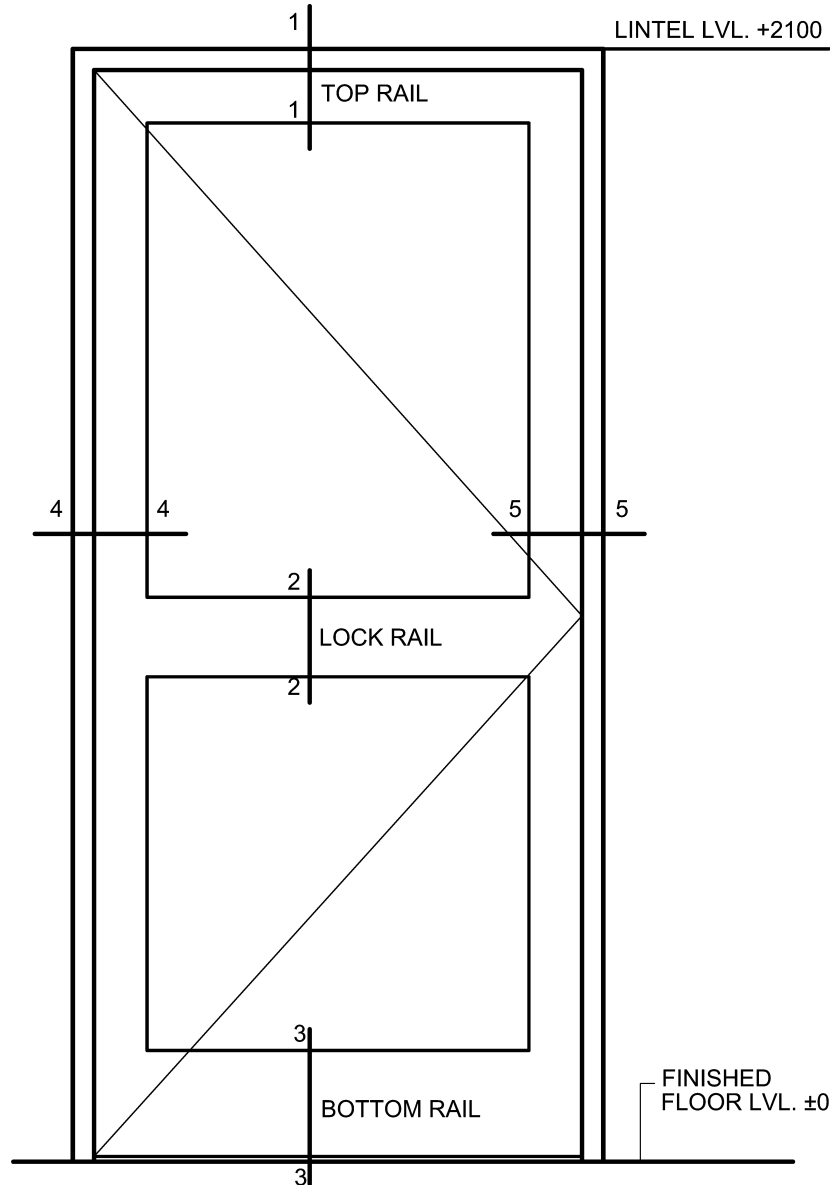


Fig. 16 : Elevation of Wooden Door

Note : Main entrance door to be a double door. One shutter with iron grill with mosquito proof wire mesh and other shutter 35mm thick panelled/flush door.

TYPICAL DOOR DETAIL – WOOD

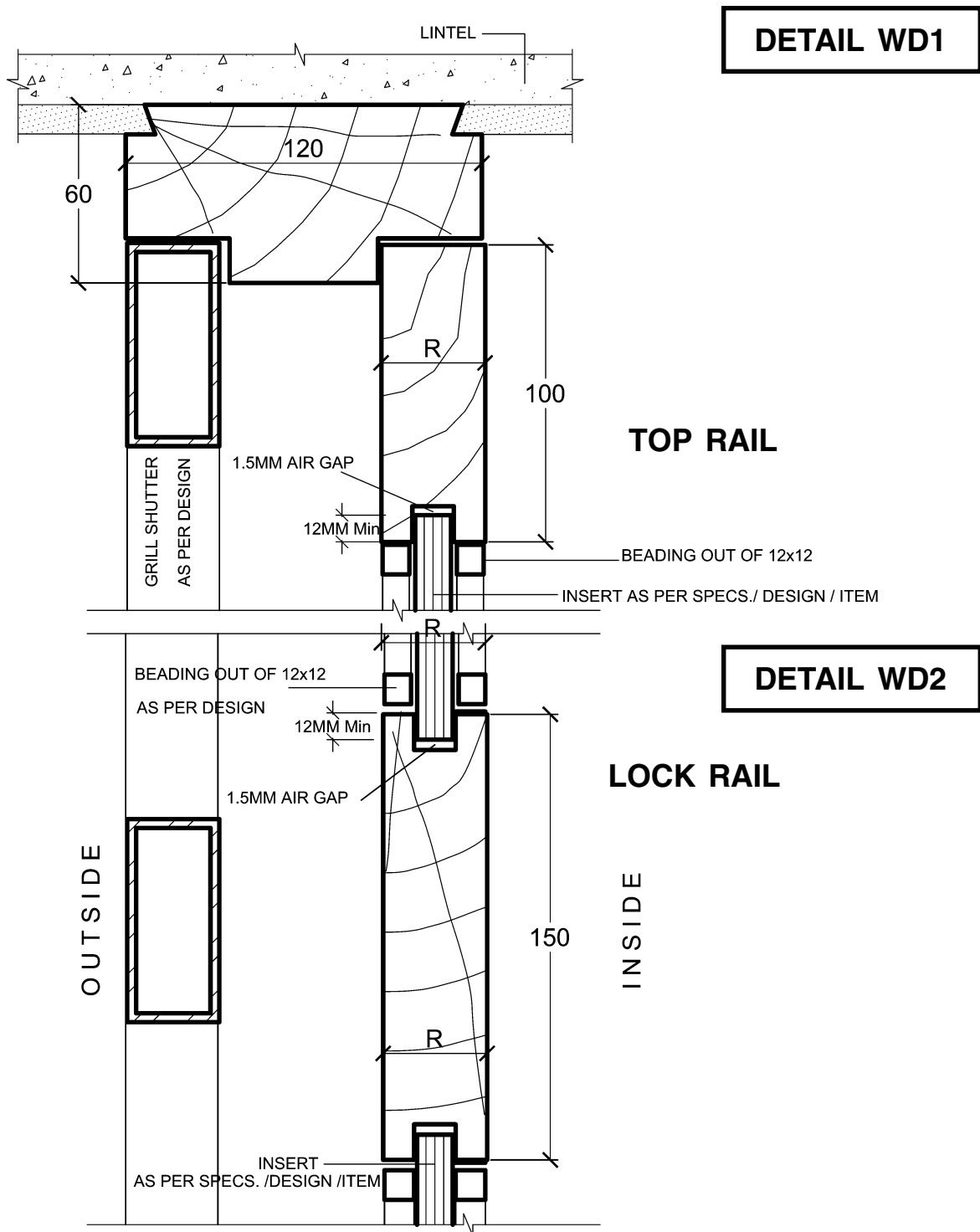


Fig. 17 : Elevation of Wooden Door

TYPICAL DOOR DETAIL – WOOD

DETAIL WD2

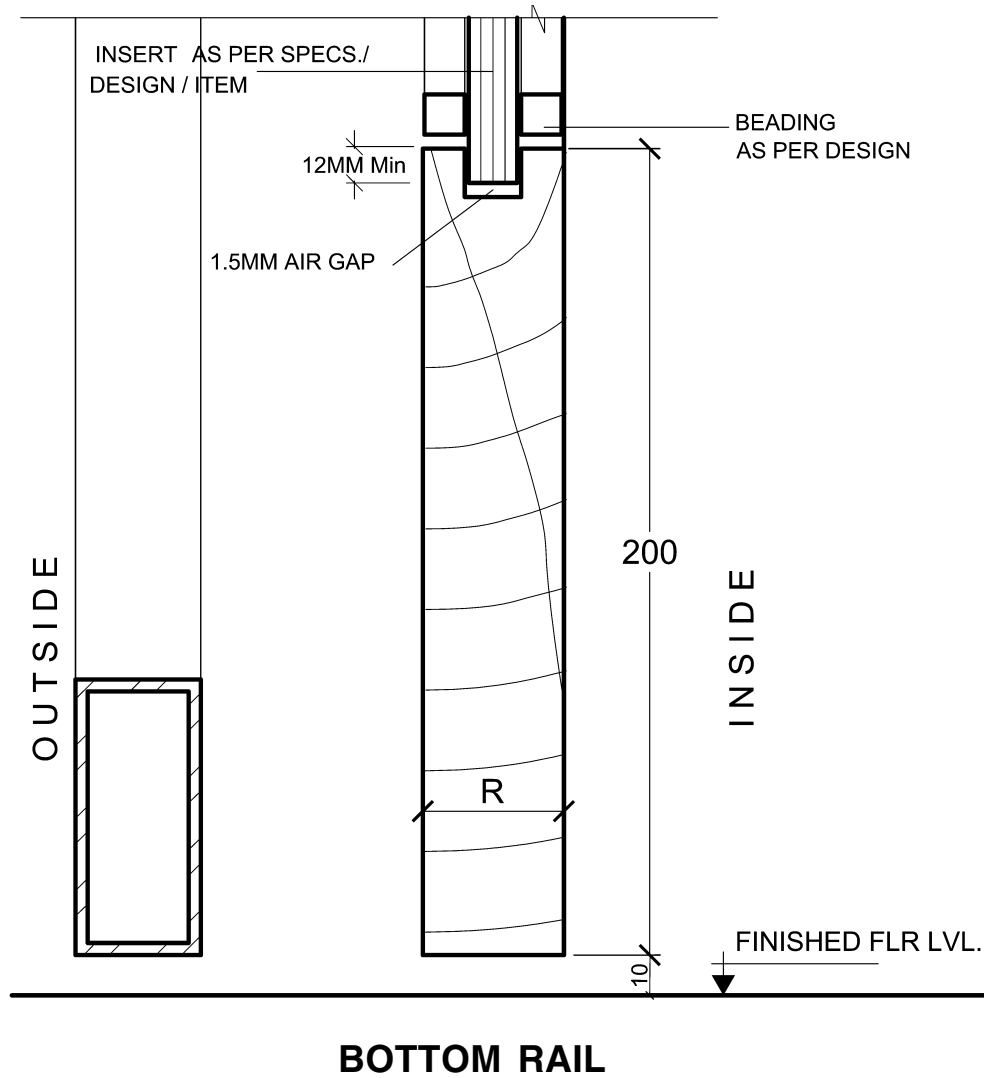
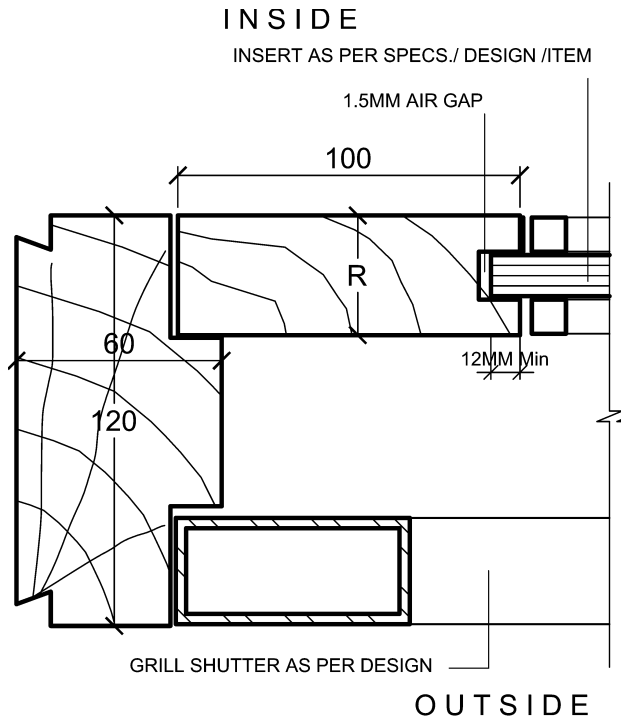
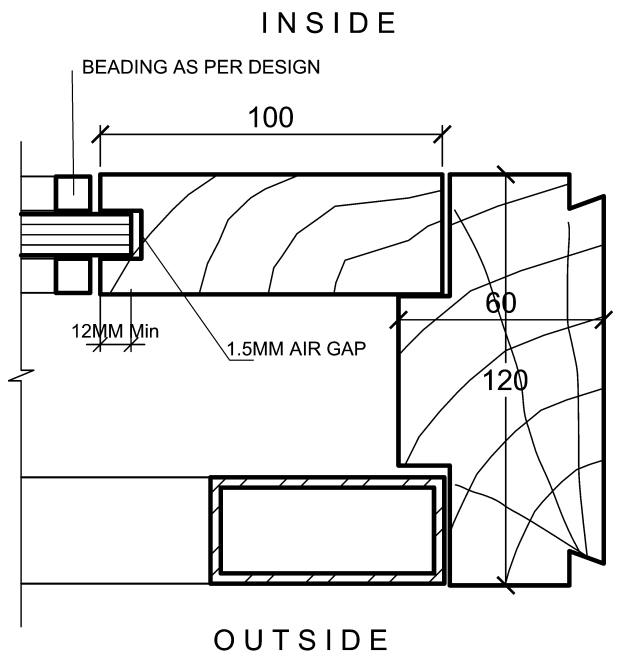


Fig. : 18

TYPICAL DOOR DETAIL – WOOD



DETAIL WD4



DETAIL WD5

Fig. : 19

TYPICAL DOOR DETAIL – WOOD

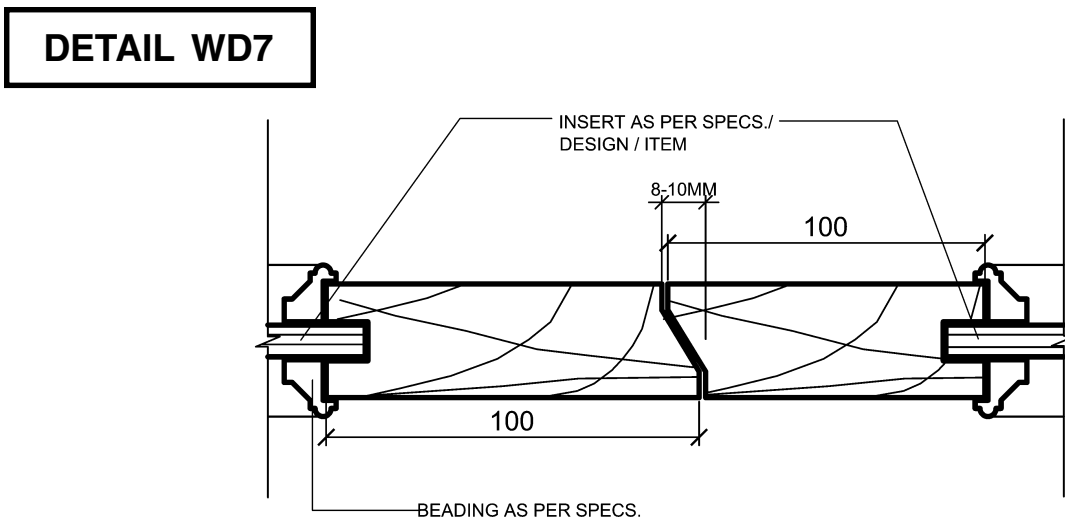
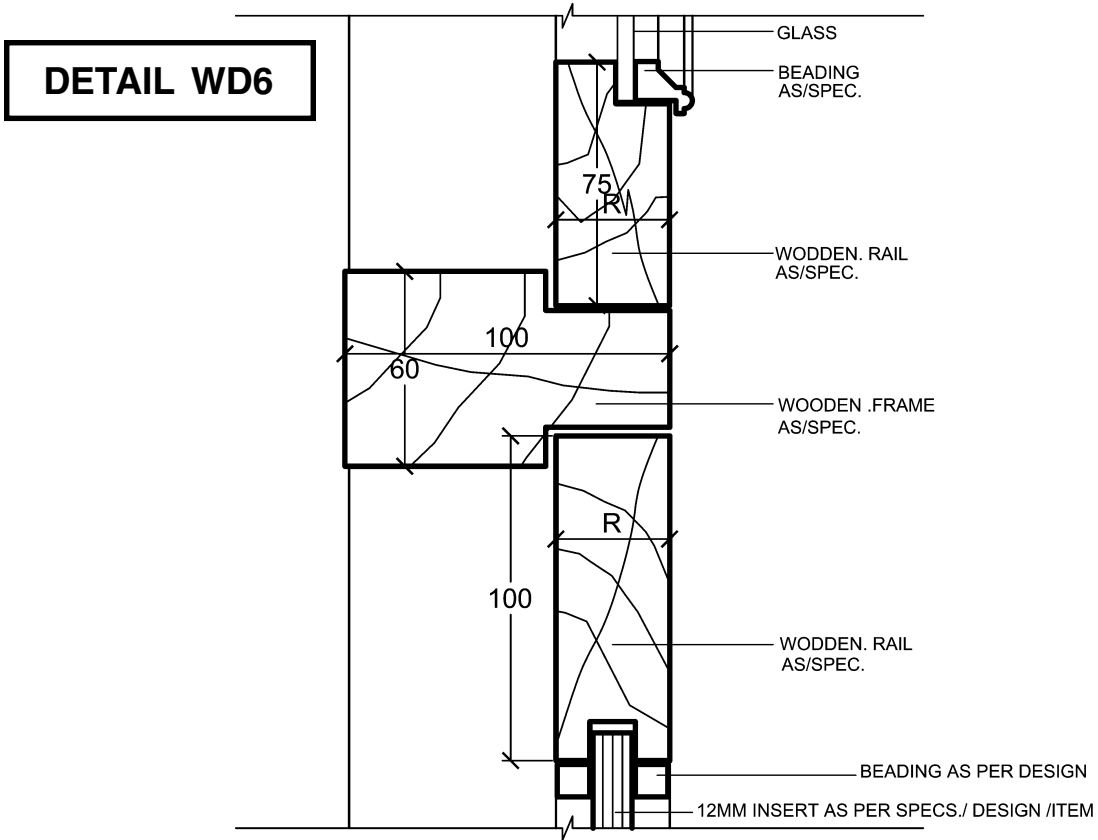


Fig. : 20

KITCHEN DOOR ELEVATION

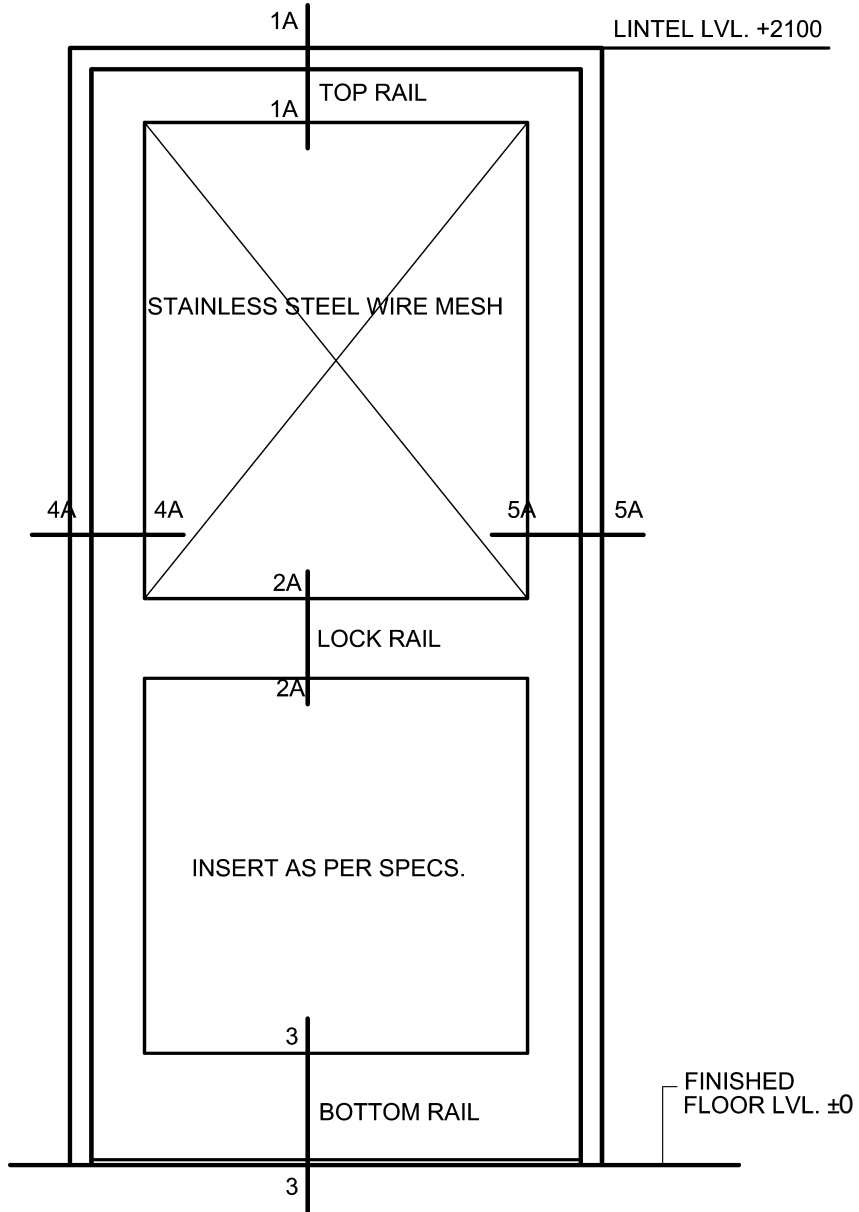


Fig. 21 : Elevation of Kitchen Door

TYPICAL DOOR DETAIL – WOOD

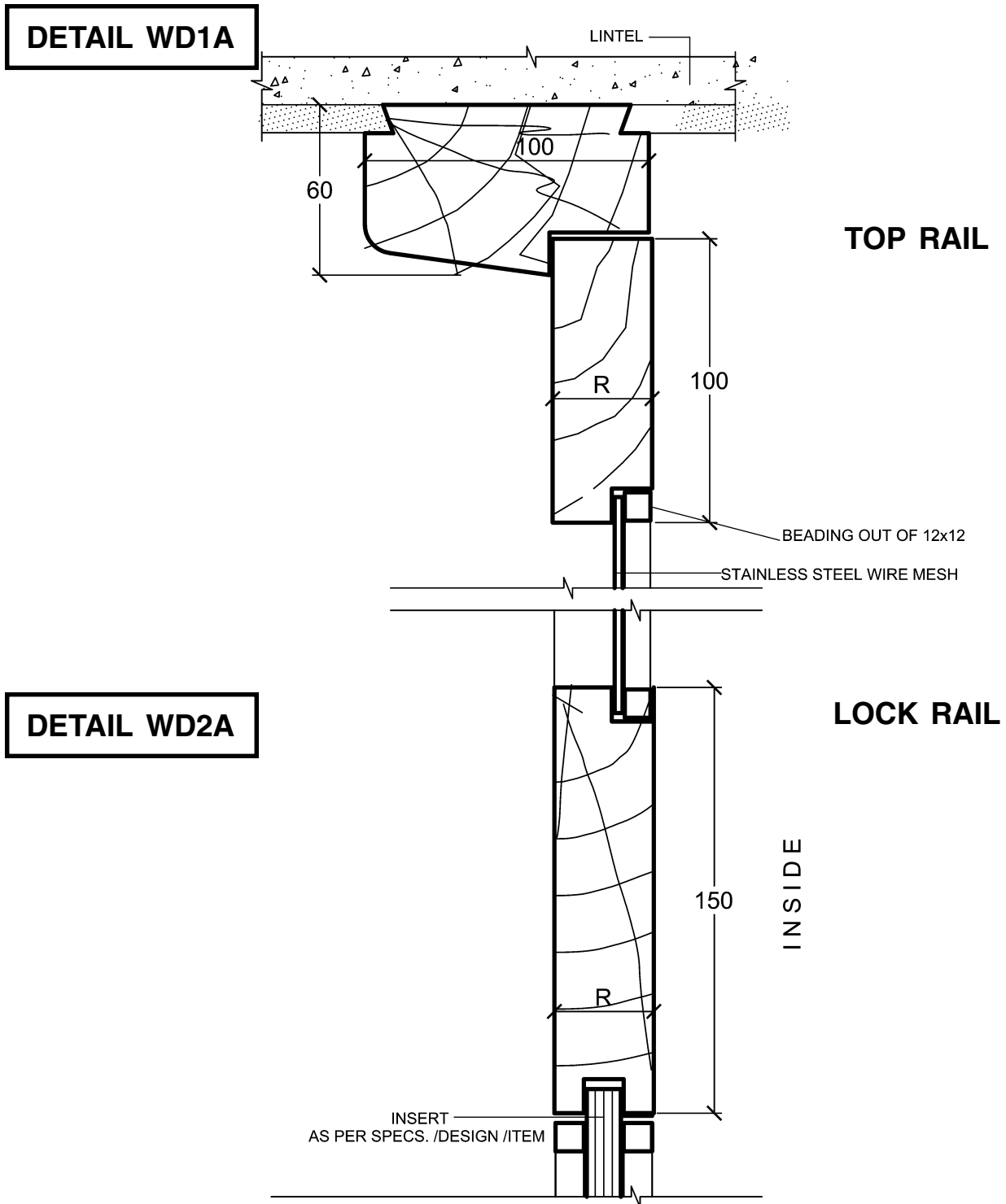
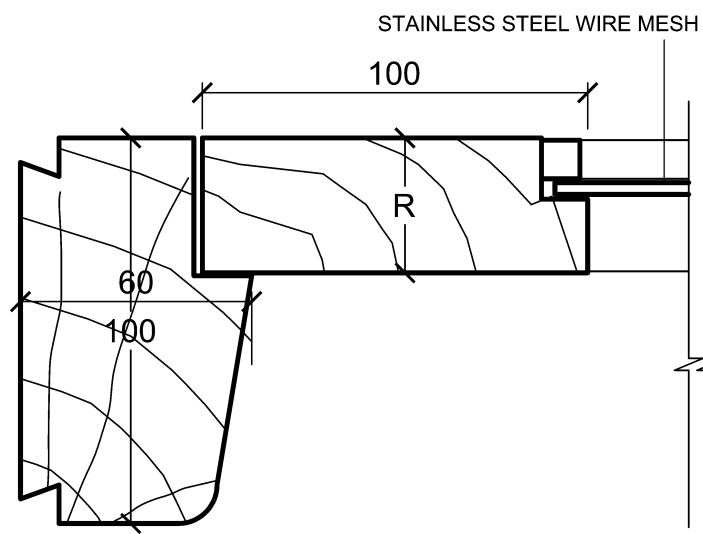
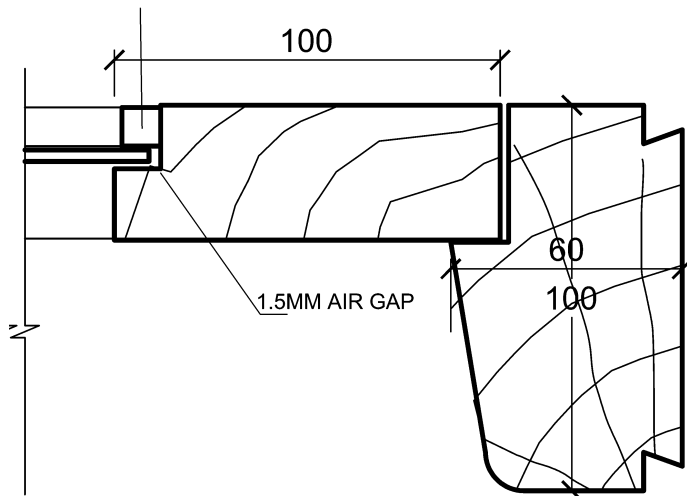


Fig. : 22

KITCHEN DOOR DETAIL – WOOD



DETAIL WD4A



DETAIL WD5A

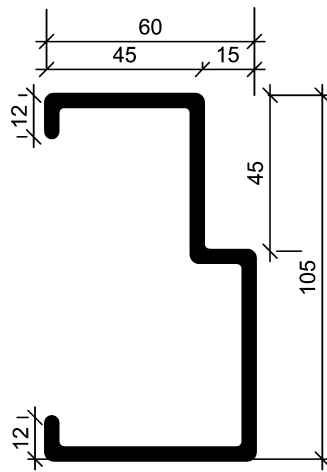
Fig. : 23

CHAPTER 2
PRESSED STEEL

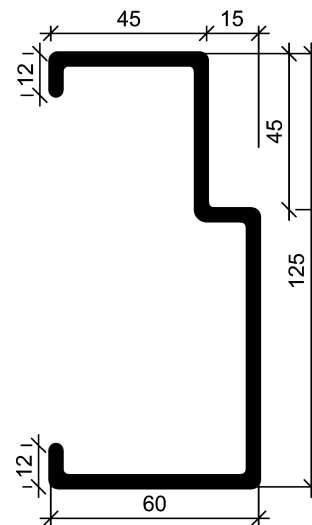
TABLE 4 – RECOMMENDED SHUTTER AND OPENING SIZES – DOORS

S. No.	Type	Location	Shutter Size	Masonry Opening Size	Frame	Shutter
1	D1	Entrance Room 1	1100 x 2045	1200 x 2100	Pressed Steel	Internal Shutter - Solid Core Flush / Panel External Shutter - Grill Shutter
2	D2	Entrance Room 2	1000 x 2045	1100 x 2100	Pressed Steel	Internal Shutter - Solid Core Flush / Panel External Shutter - Grill Shutter
3	D3	Room Door 1	900 x 2045	1000 x 2100	Pressed Steel	Solid Core Flush Shutter or Panel Shutter
4	D4	Room Door 2	800 x 2045	900 x 2100	Pressed Steel	Solid Core Flush Shutter or Panel Shutter
5	D5	Kitchen & Store	800 x 2045	900 x 2100	Pressed Steel	Partly Panel and Partly Wire Mesh Shutter
6	D6	Toilet	650 x 2045	750 x 2100	Pressed Steel	1. Panel Shutter 2. Solid PVC Shutter

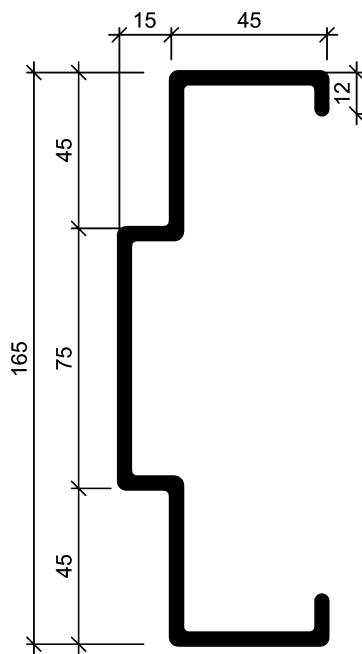
PRESSED STEEL PROFILE FOR DOORS / WINDOWS



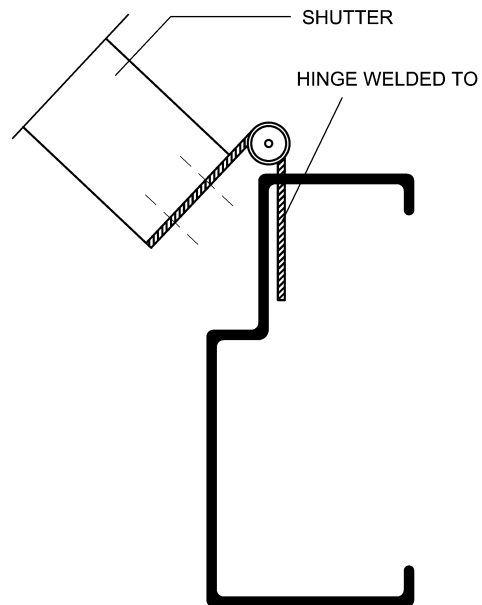
PROFILE - A



PROFILE - B



PROFILE - C



FIXING OF HINGE TO FRAME

Note : 45mm width of flange as indicated is applicable to all thickness of shutters namely 25, 30, 35, & 40mm

Fig. 24 : Pressed Steel Profiles

ELEVATION OF WOODEN/PRESSED STEEL FRAME FOR DOORS

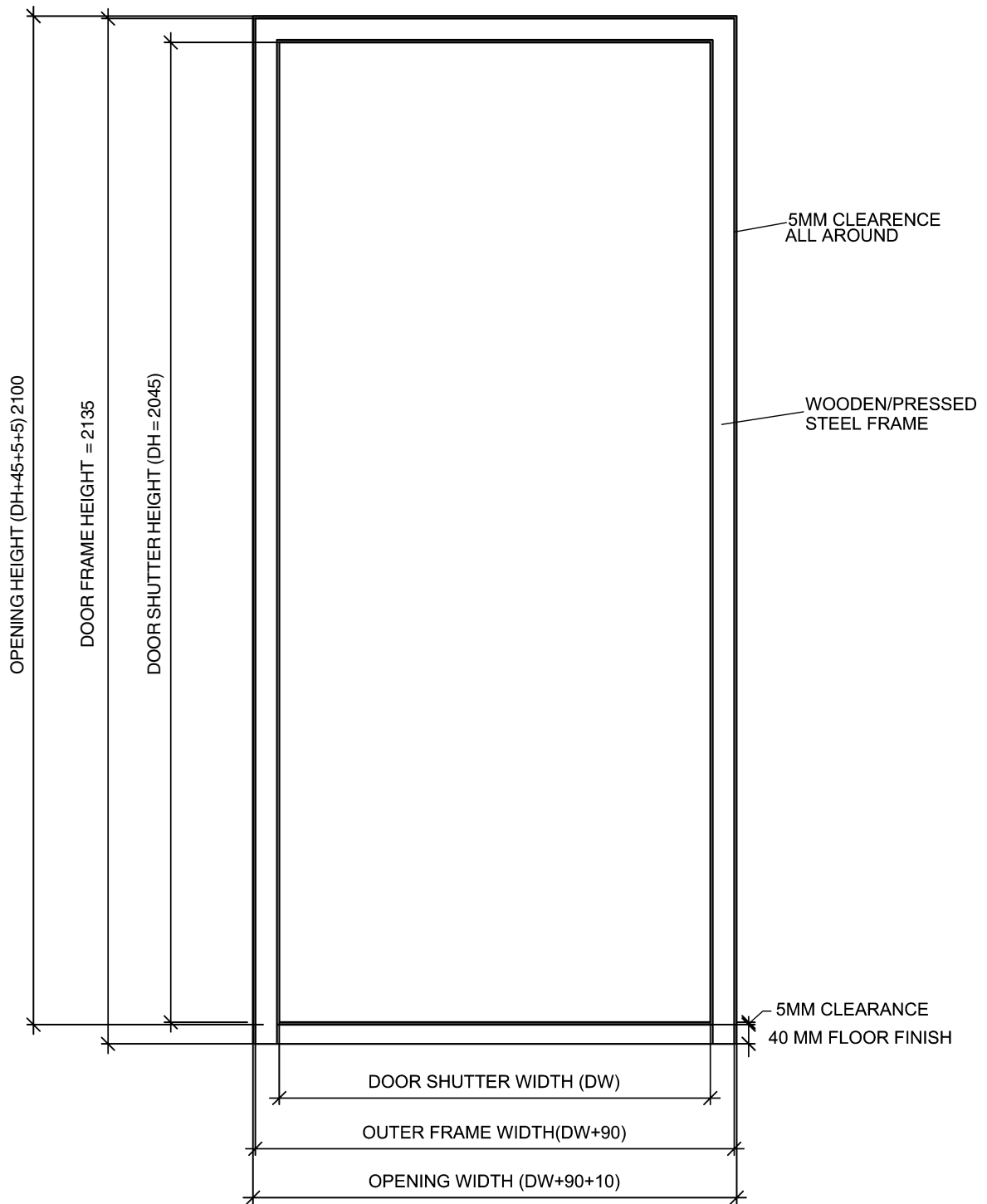


Fig. 25 : Elevation of Door Frames

CHAPTER 3
ALUMINIUM WINDOW
DETAILS

TABLE 2 – RECOMMENDED OPENING SIZES – WINDOWS

S. No.	Type	Location	Sill Height	Masonry Opening Size
1	W1	Habitable Room	750	1800 x 1350
2	W2	Habitable Room	900	1800 x 1200
3	W3	Habitable Room	750	1500 x 1350
4	W4	Habitable Room	900	1500 x 1200
5	W5	Habitable Room	750	1200 x 1350
6	W6	Habitable Room	900	1200 x 1200
7	W7	Habitable Room	750	900 x 1350
8	W8	Habitable Room	900	900 x 1200
9	W9	Habitable Room	750	600 x 1350
10	W10	Habitable Room	900	600 x 1200
11	W11	Habitable Room	750	450 x 1350
12	W12	Habitable Room	900	450 x 1200
13	W13	Kitchen	1050	900 x 1050
14	W14	Toilet	1050	600 x 1050
15	W15	Toilet	1050	450 x 1050

RECOMMENDED ELEVATION OF WINDOWS FOR FIXING COOLER/AC

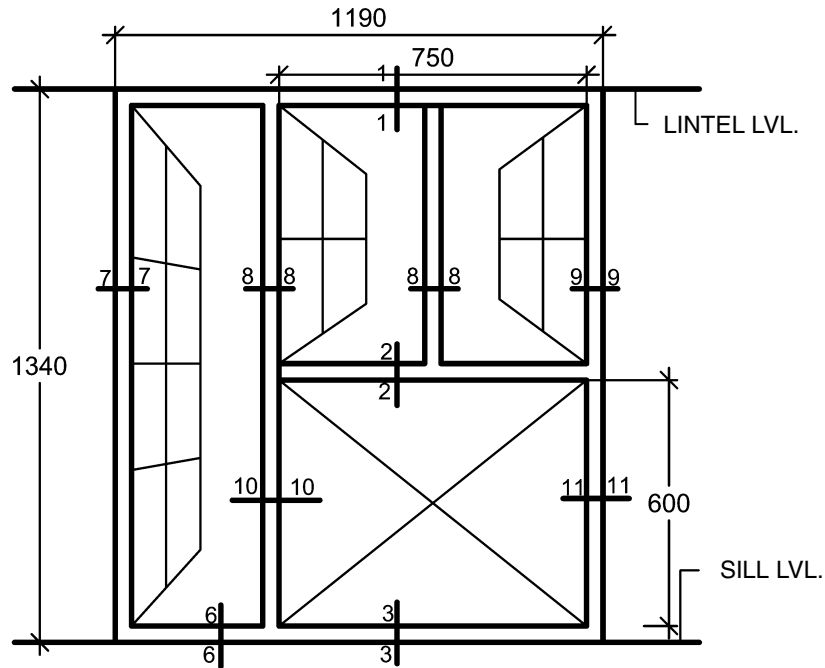


Fig. 26 : Opening Size 1200 x 1350

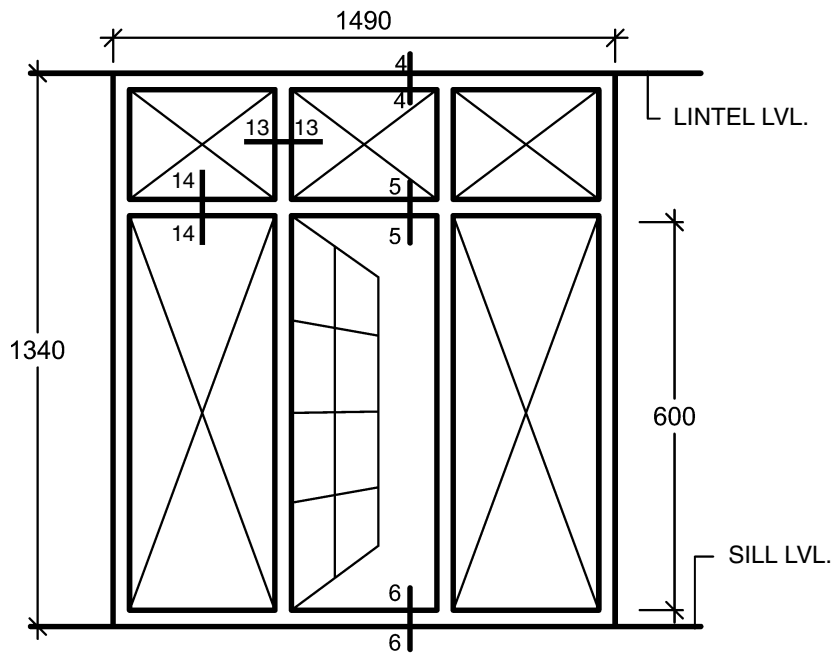


Fig. 27 : Opening Size 1500 x 1350

TYPICAL WINDOW DETAILS – ALUMINIUM

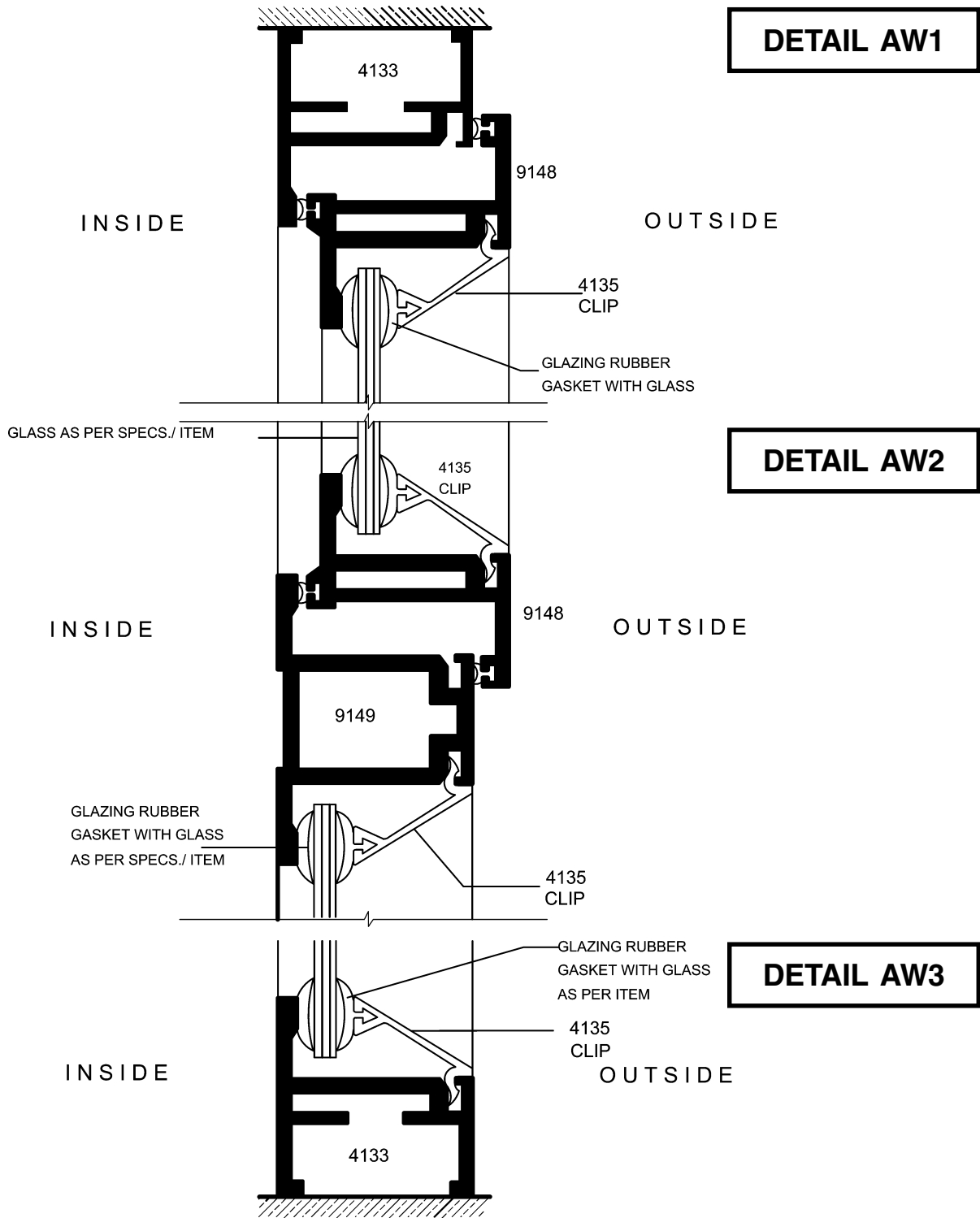
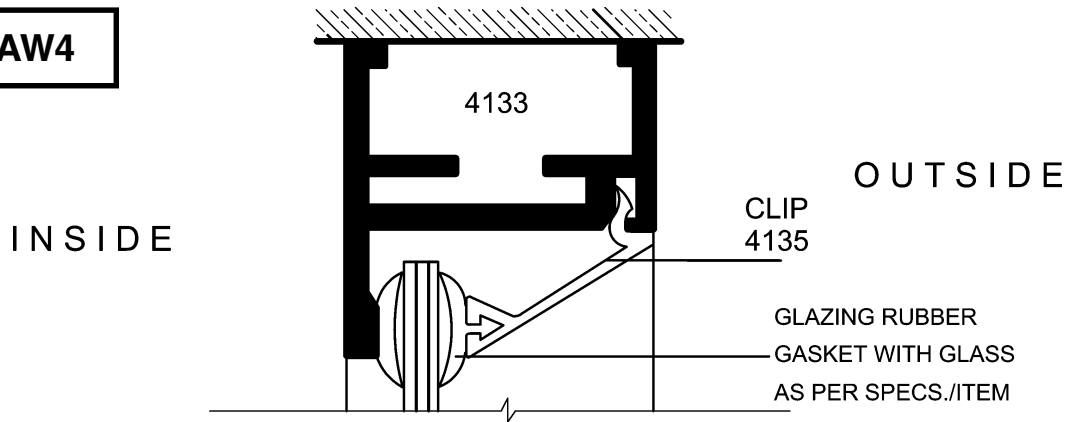


Fig. 28

TYPICAL WINDOW DETAILS – ALUMINIUM

DETAIL AW4



DETAIL AW5

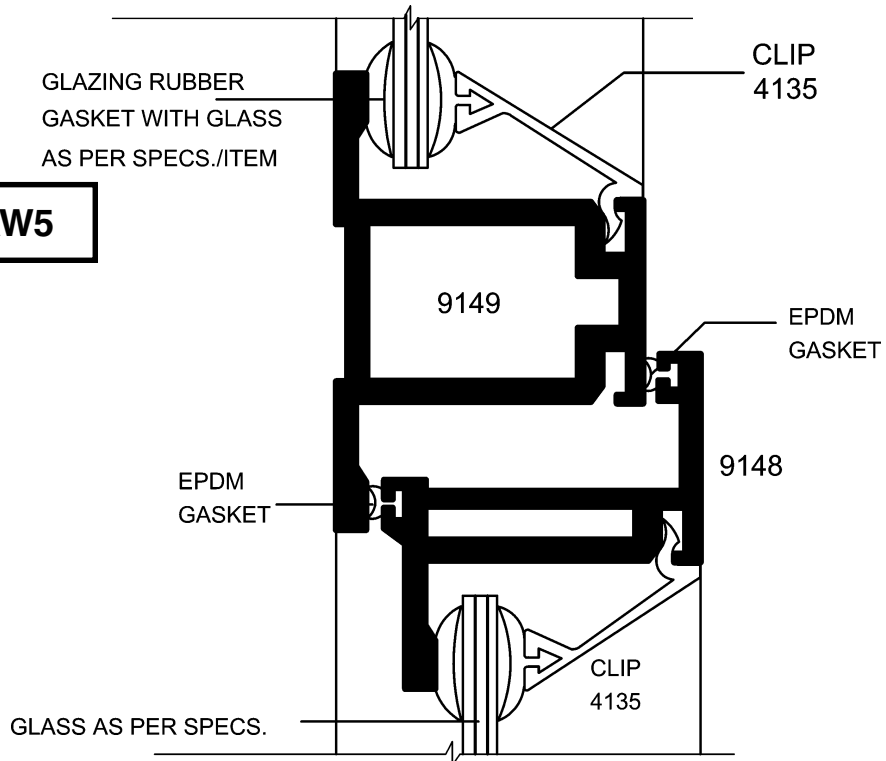


Fig. 29

TYPICAL WINDOW DETAILS – ALUMINIUM

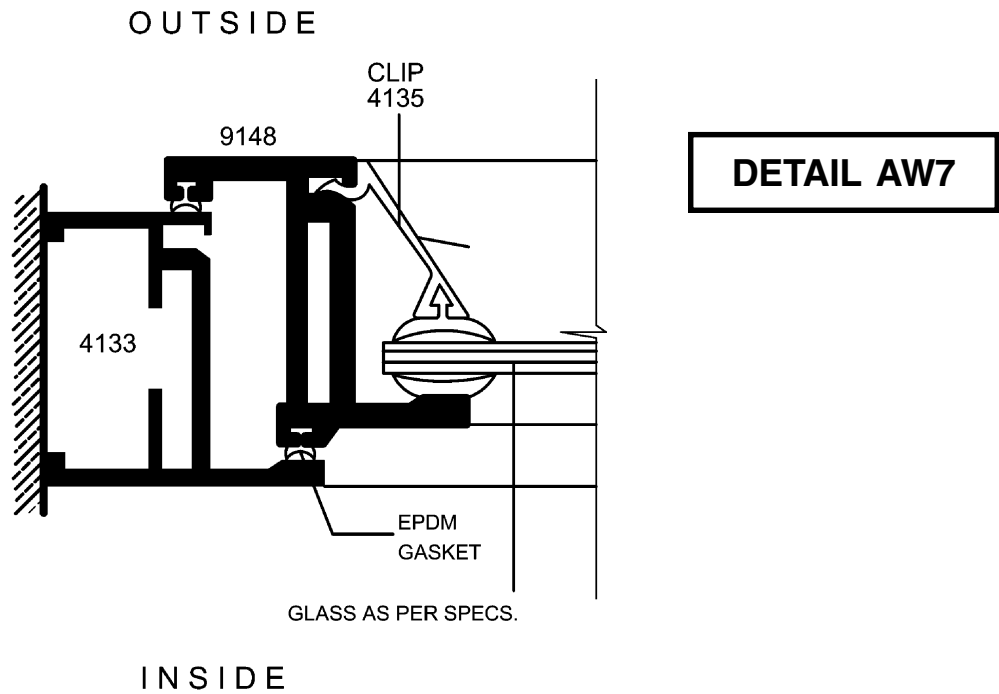
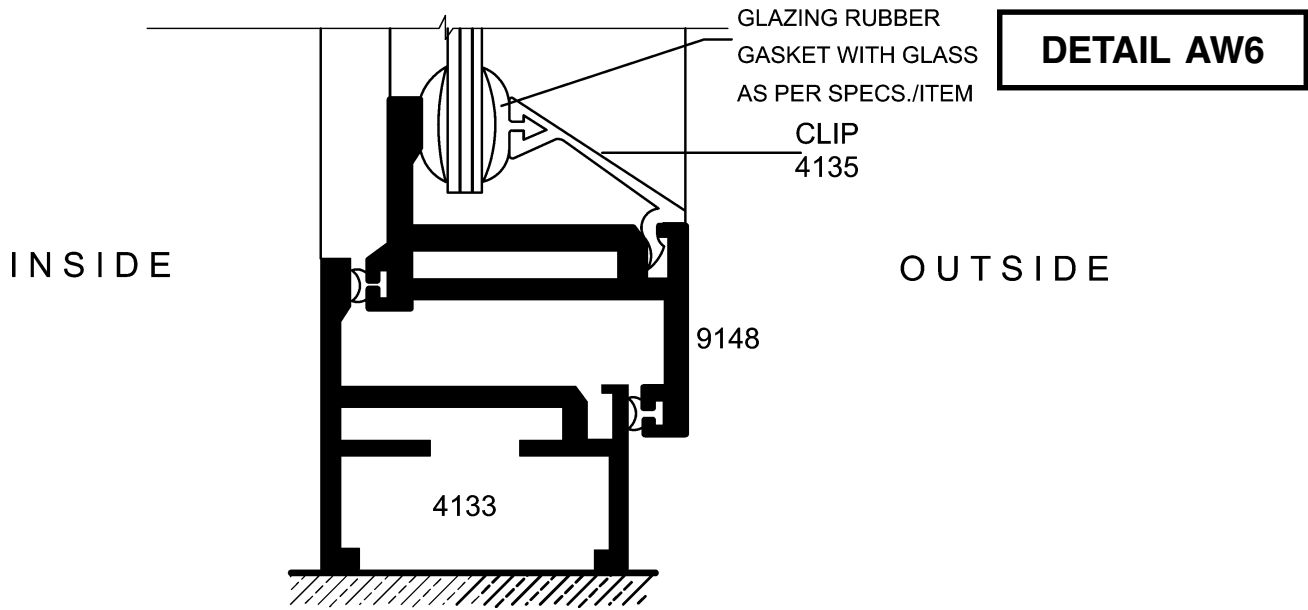


Fig. 30

TYPICAL WINDOW DETAILS – ALUMINIUM

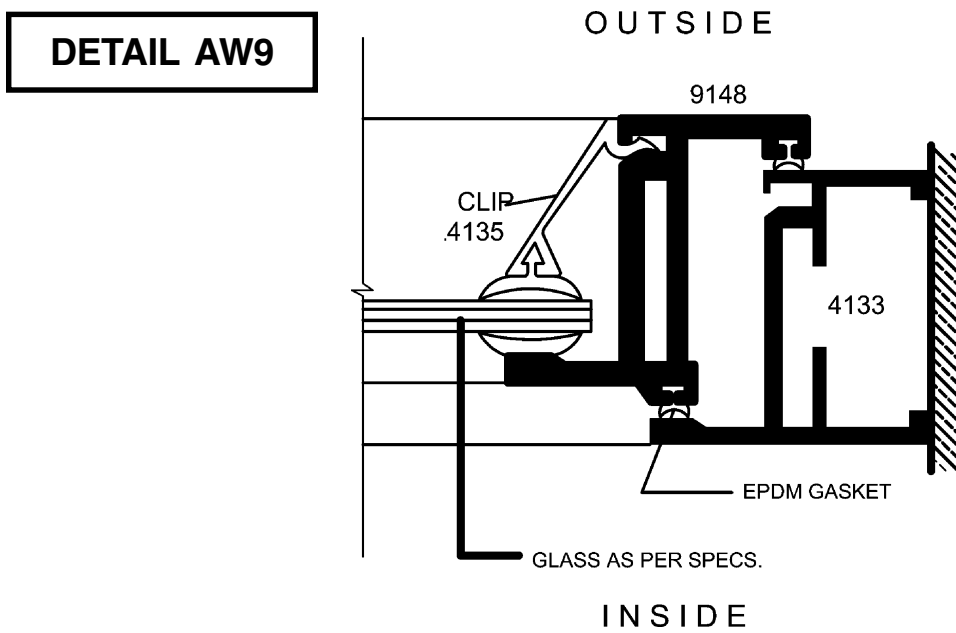
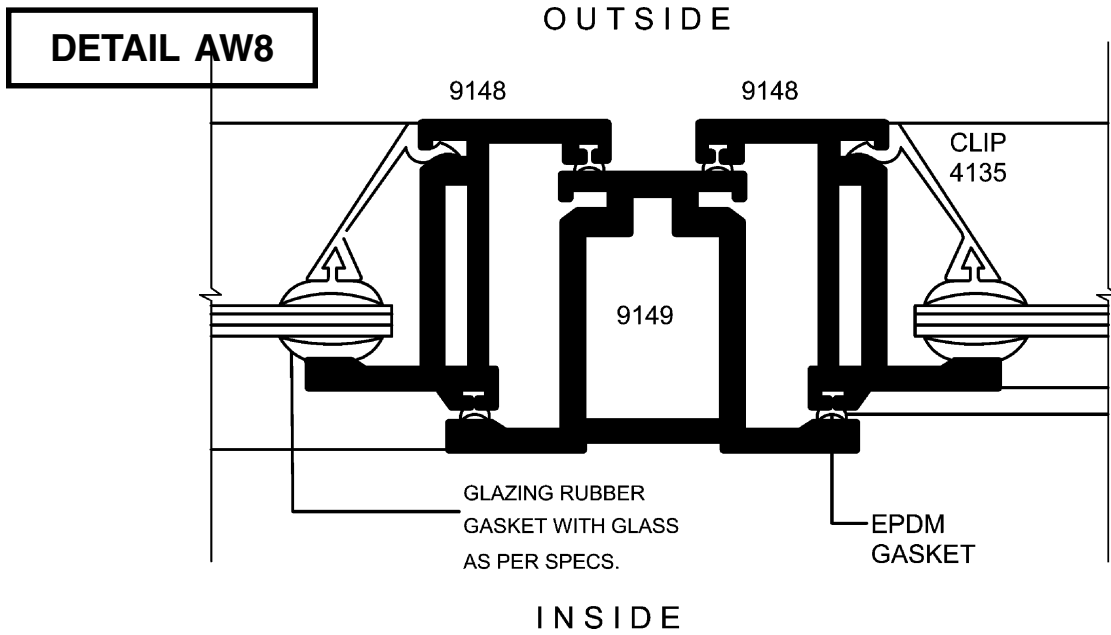


Fig. 31

TYPICAL WINDOW DETAILS – ALUMINIUM

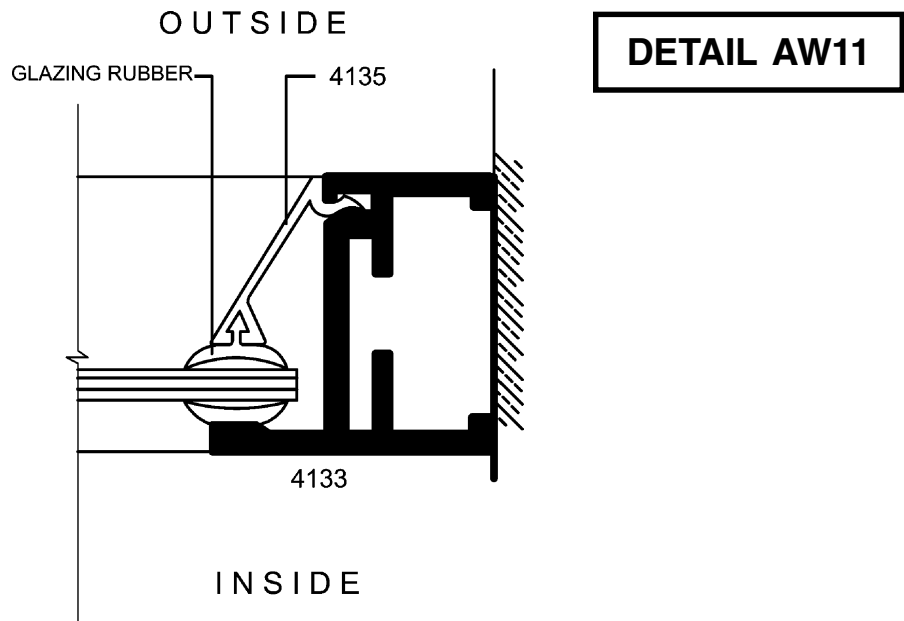
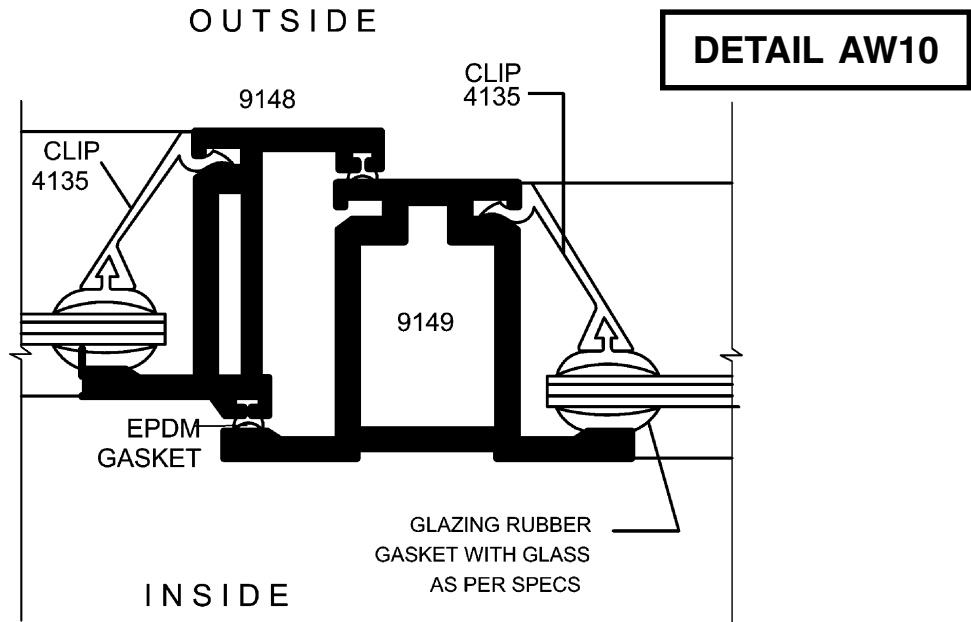
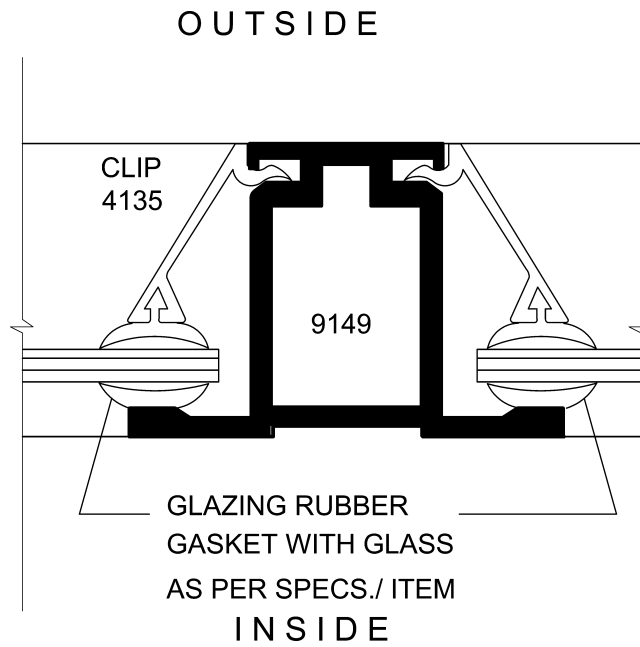


Fig. 32

TYPICAL WINDOW DETAILS – ALUMINIUM

DETAIL AW13



DETAIL AW14

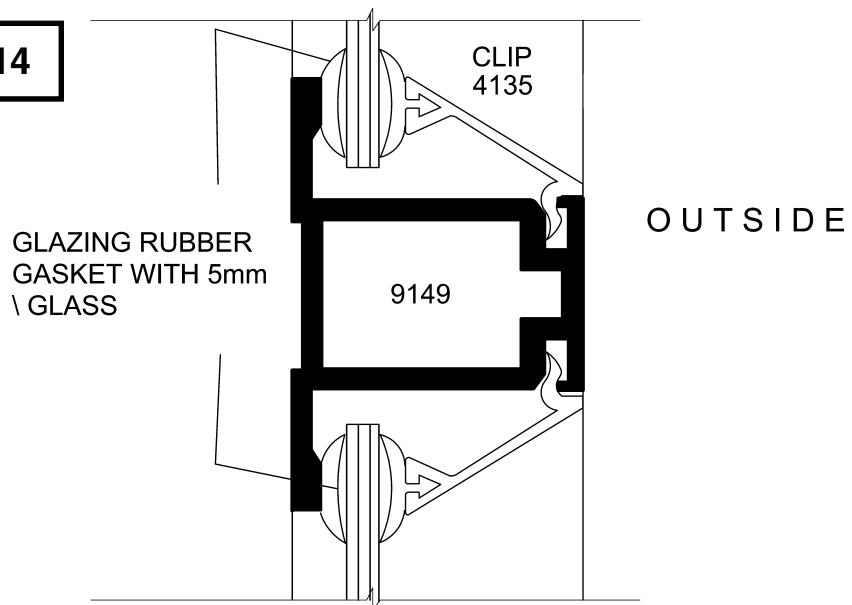


Fig. 33

TYPICAL WINDOW DETAILS – ALUMINIUM

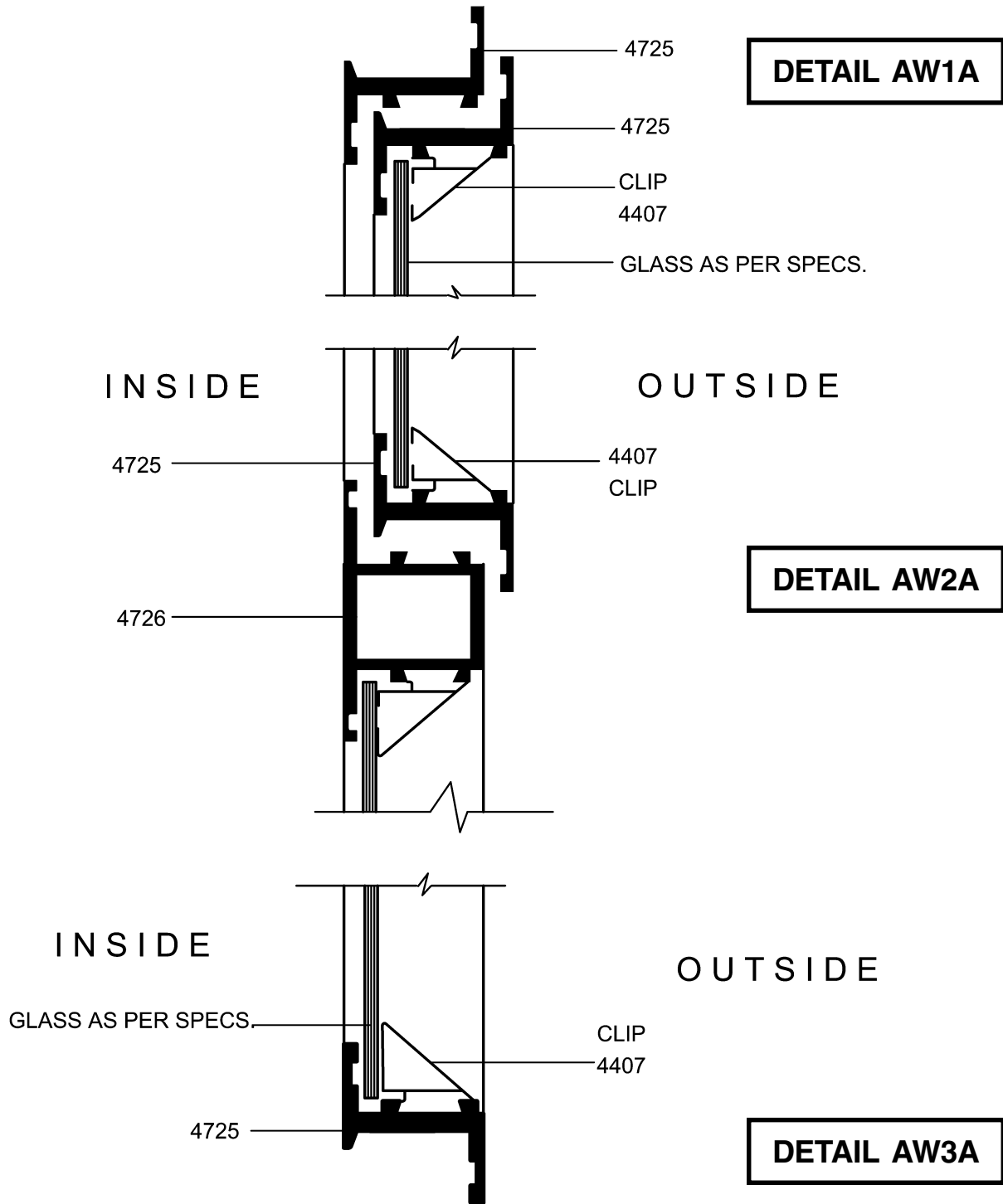
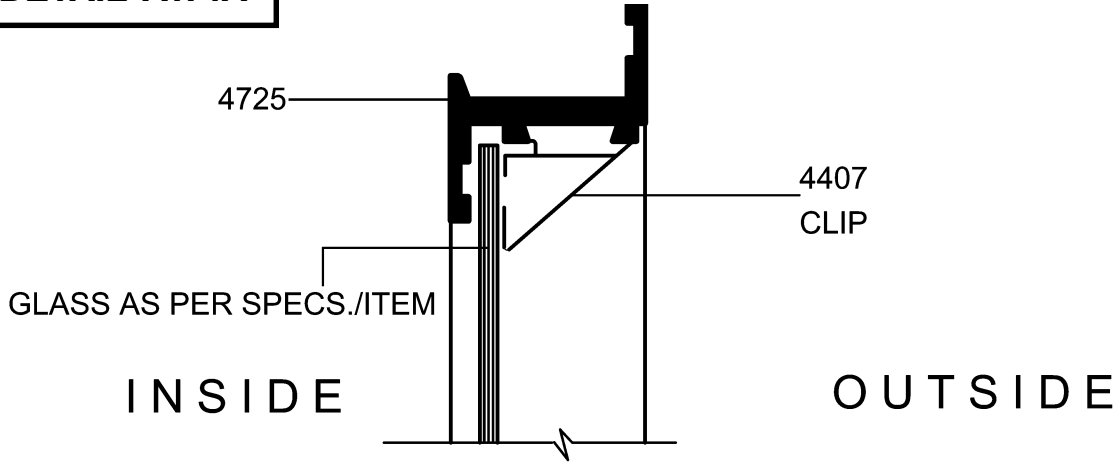


Fig. 34

TYPICAL WINDOW DETAILS – ALUMINIUM

DETAIL AW4A



DETAIL AW5A

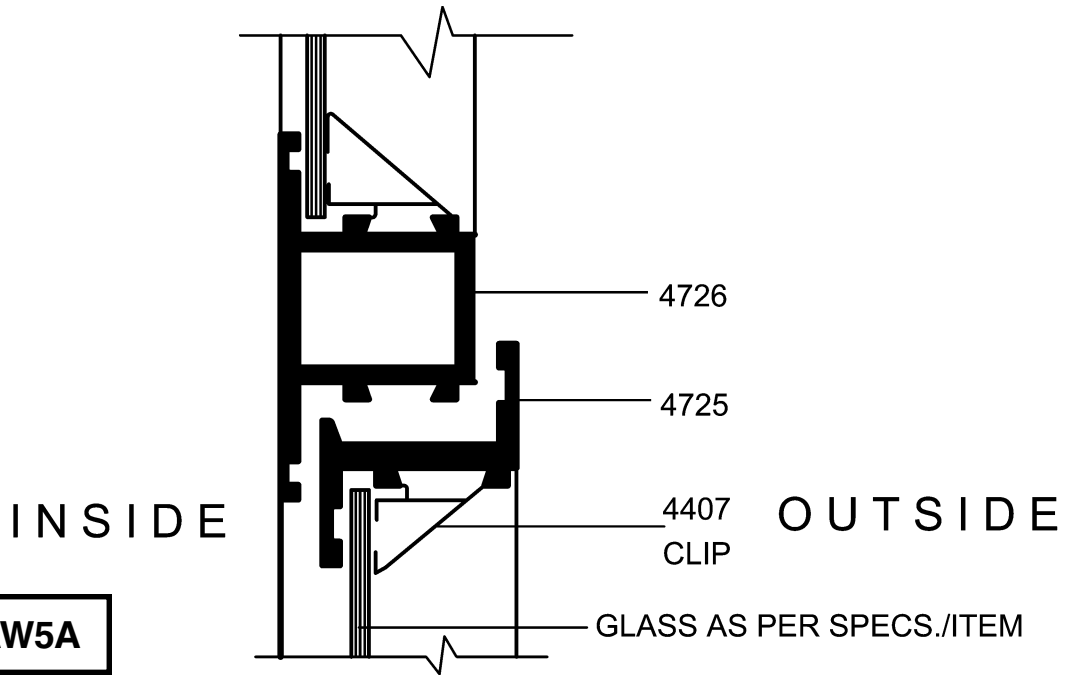
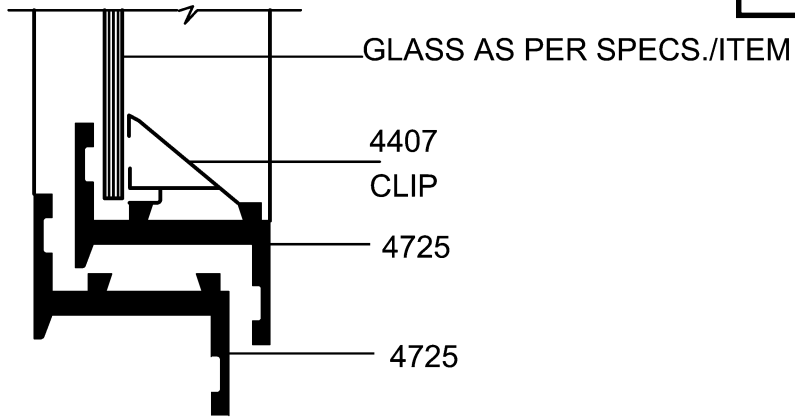


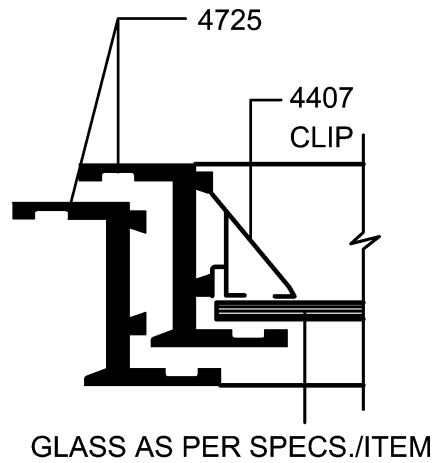
Fig. 35

TYPICAL WINDOW DETAILS – ALUMINIUM

DETAIL AW6A



OUTSIDE



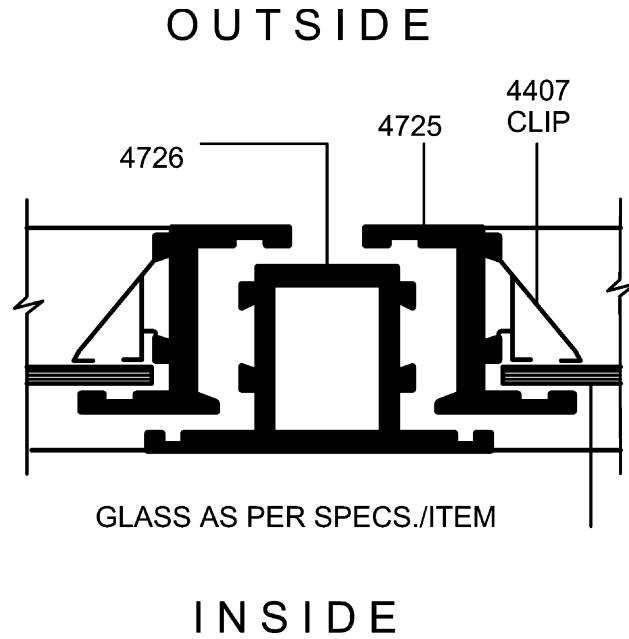
DETAIL AW7A

INSIDE

Fig. 36

TYPICAL WINDOW DETAILS – ALUMINIUM

DETAIL AW8A



DETAIL AW9A

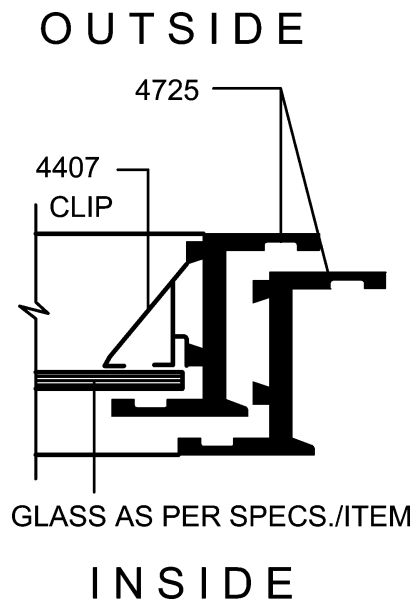


Fig. 37

TYPICAL WINDOW DETAILS – ALUMINIUM

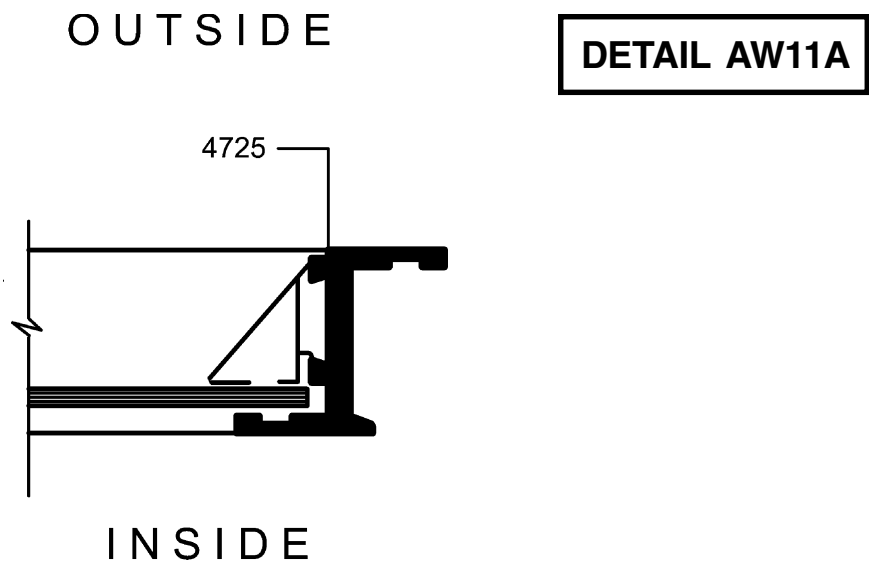
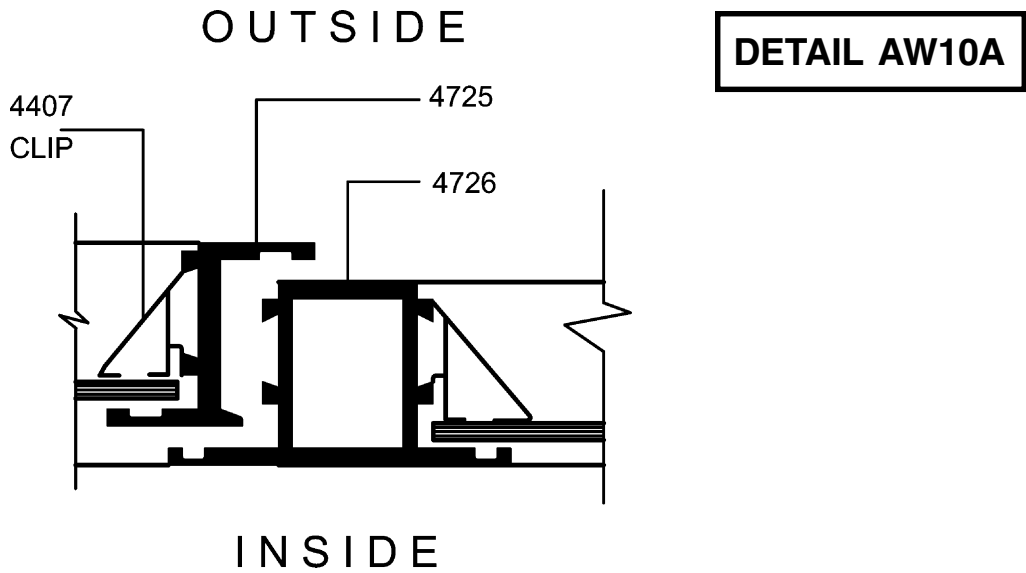


Fig. 38

TYPICAL WINDOW DETAILS – ALUMINIUM

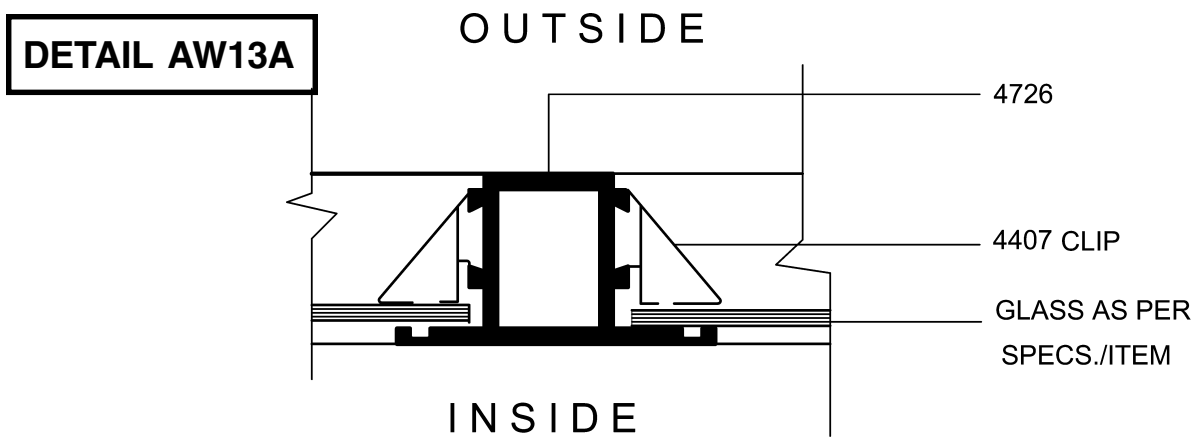
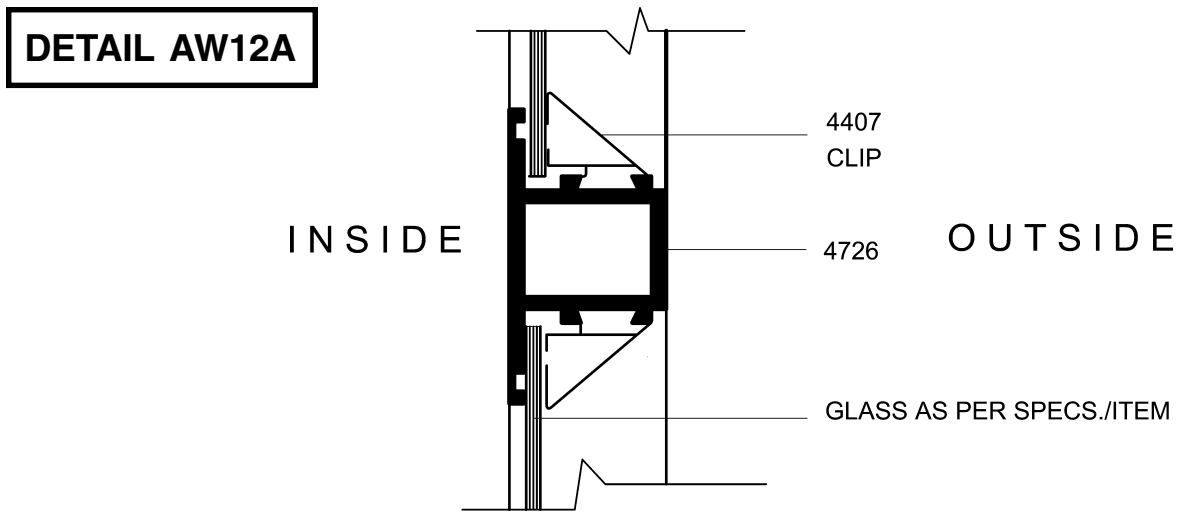


Fig. 39

CHAPTER 4

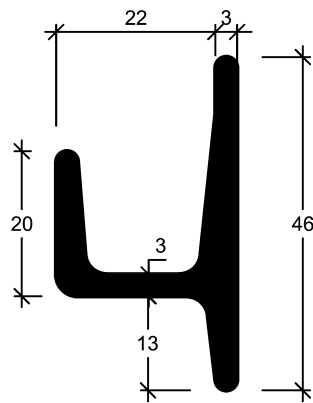
STEEL

WINDOW DETAILS

TABLE 2 – RECOMMENDED OPENING SIZES – WINDOWS

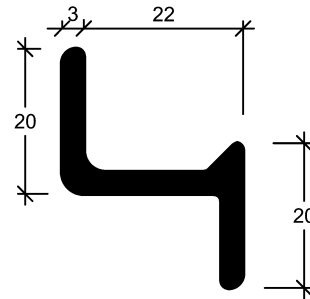
S. No.	Type	Location	Sill Height	Masonry Opening Size
1	W1	Habitable Room	750	1800 x 1350
2	W2	Habitable Room	900	1800 x 1200
3	W3	Habitable Room	750	1500 x 1350
4	W4	Habitable Room	900	1500 x 1200
5	W5	Habitable Room	750	1200 x 1350
6	W6	Habitable Room	900	1200 x 1200
7	W7	Habitable Room	750	900 x 1350
8	W8	Habitable Room	900	900 x 1200
9	W9	Habitable Room	750	600 x 1350
10	W10	Habitable Room	900	600 x 1200
11	W11	Habitable Room	750	450 x 1350
12	W12	Habitable Room	900	450 x 1200
13	W13	Kitchen	1050	900 x 1050
14	W14	Toilet	1050	600 x 1050
15	W15	Toilet	1050	450 x 1050

TYPICAL STEEL SECTIONS – WINDOW



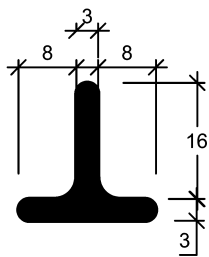
NO. F4B (2.28 kg/m)

CENTRAL MULLION FOR WINDOWS
USING F7D AS INNER FRAME,
OUTER FRAME FOR OPEN-IN WINDOWS



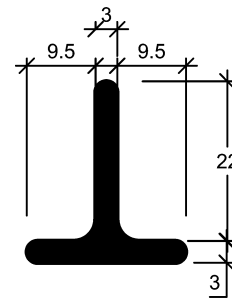
NO. F7D (1.419 kg/m)

INNER/ OUTER FRAMES
FOR WINDOWS



NO. T-6 (0.839 kg/m)

HORIZONTAL GLAZING BAR



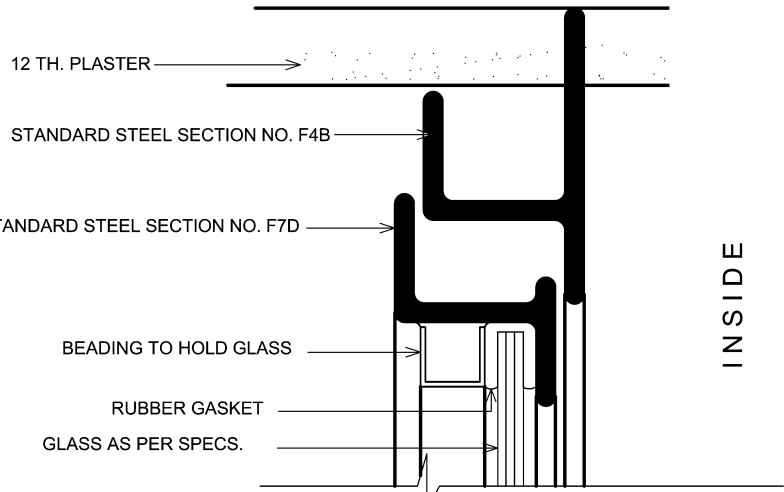
NO. T-2 (1.036 kg/m)

SASH BAR

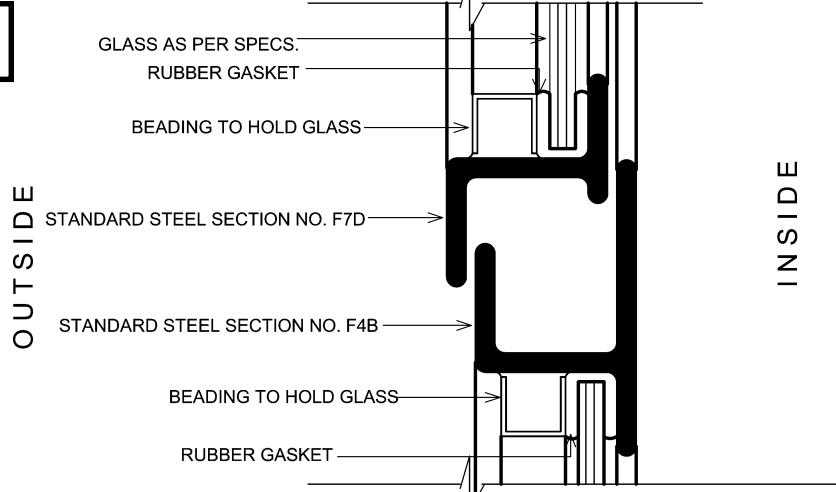
Fig. 40 : Steel Sections

TYPICAL WINDOW DETAILS – STEEL

DETAIL SW1



DETAIL SW2



DETAIL SW3

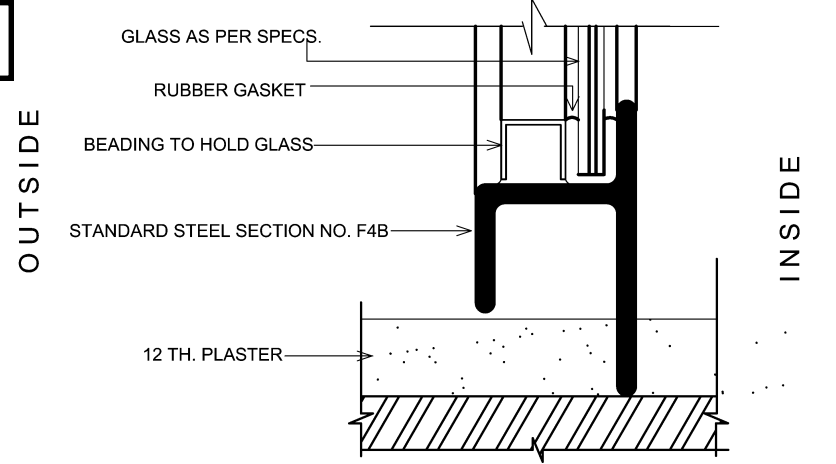


Fig. 43

TYPICAL WINDOW DETAILS – STEEL

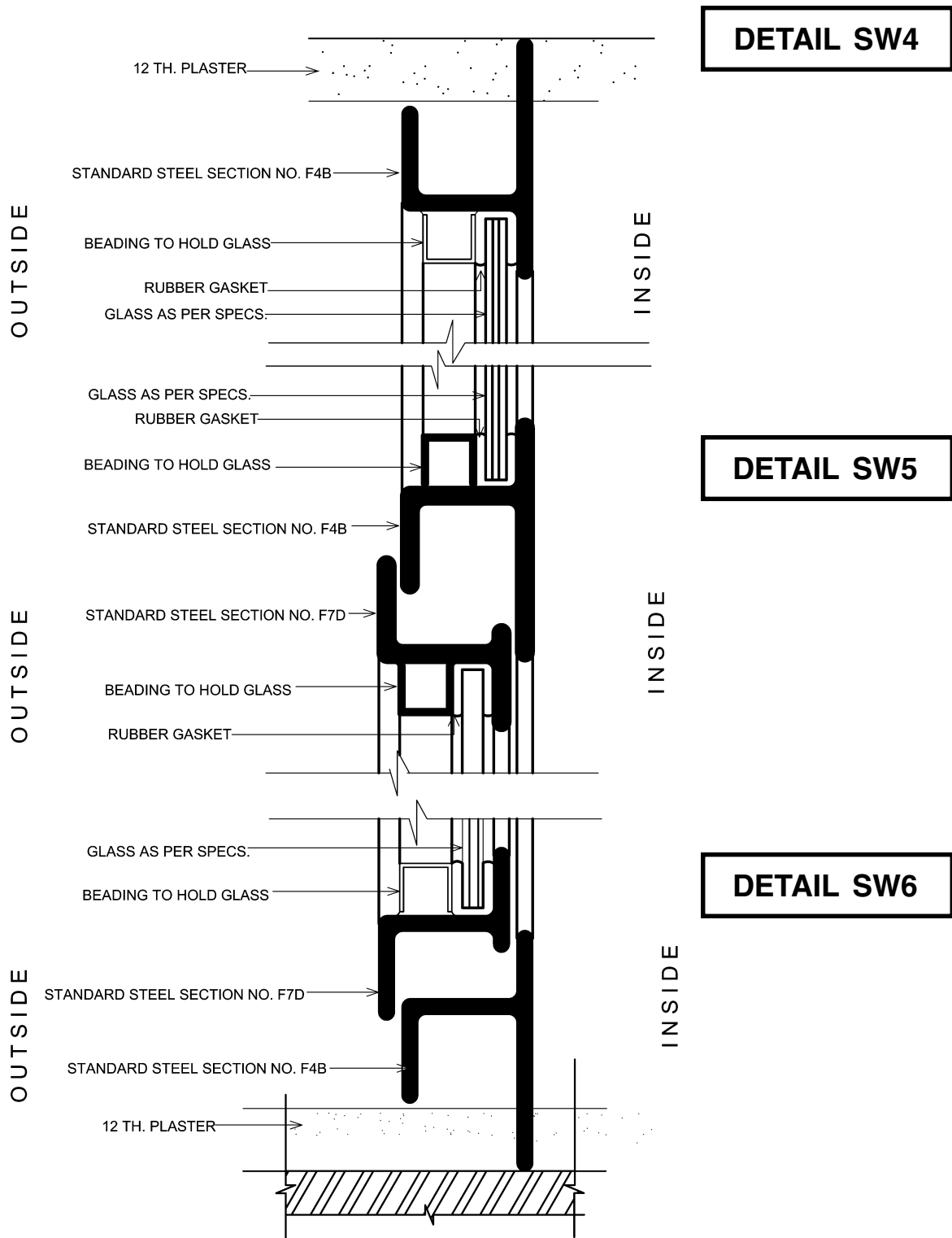
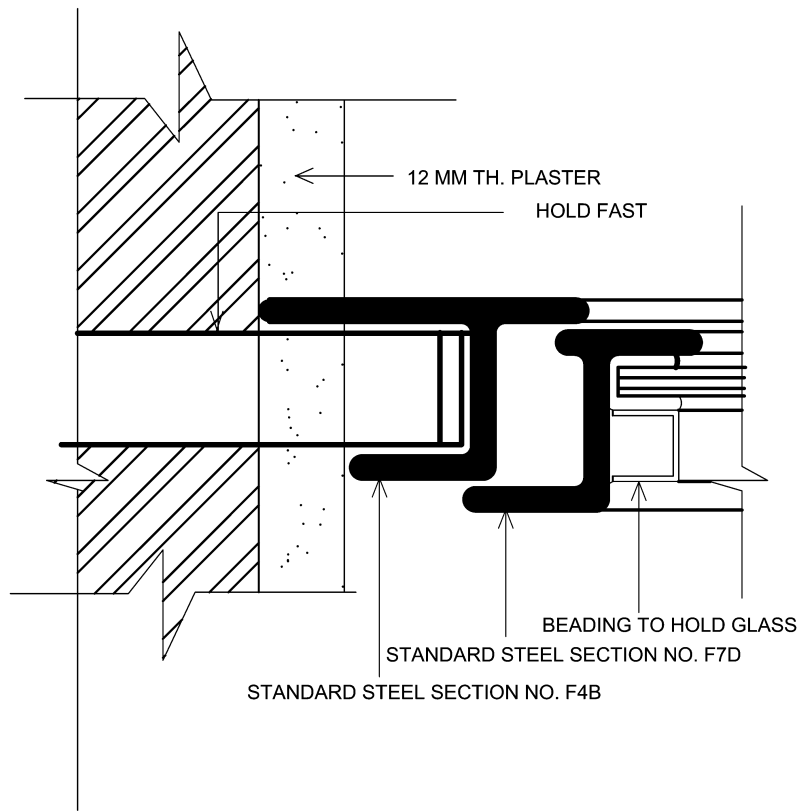


Fig. 44

TYPICAL STEEL SECTIONS – WINDOW

DETAIL SW7



DETAIL SW8

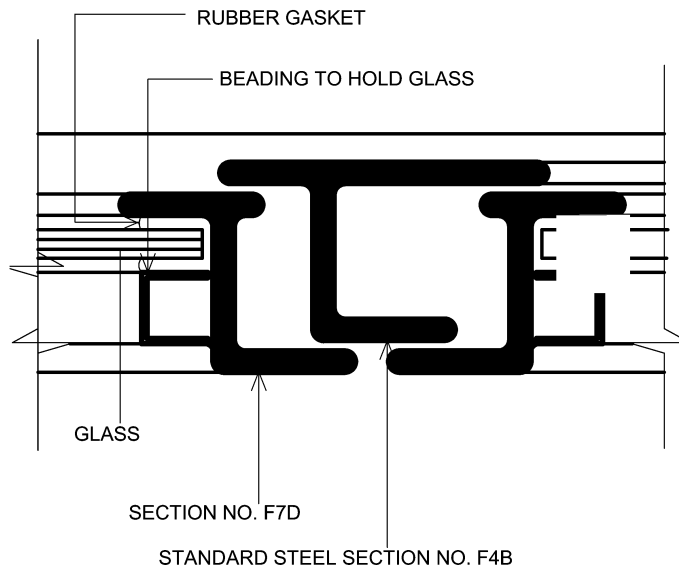


Fig. 45

TYPICAL STEEL SECTIONS – WINDOW

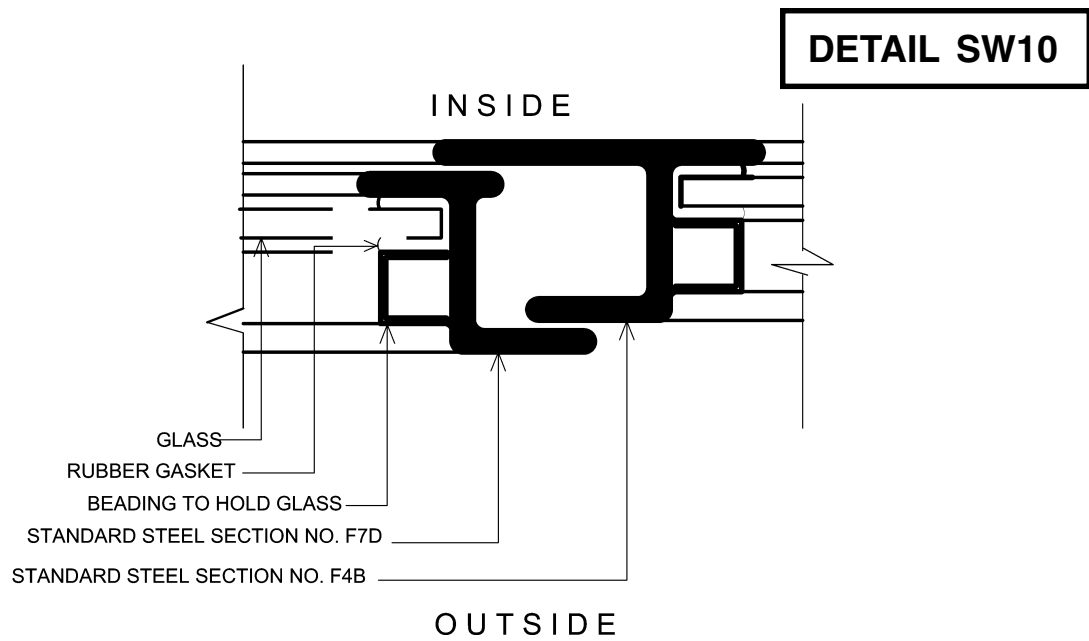
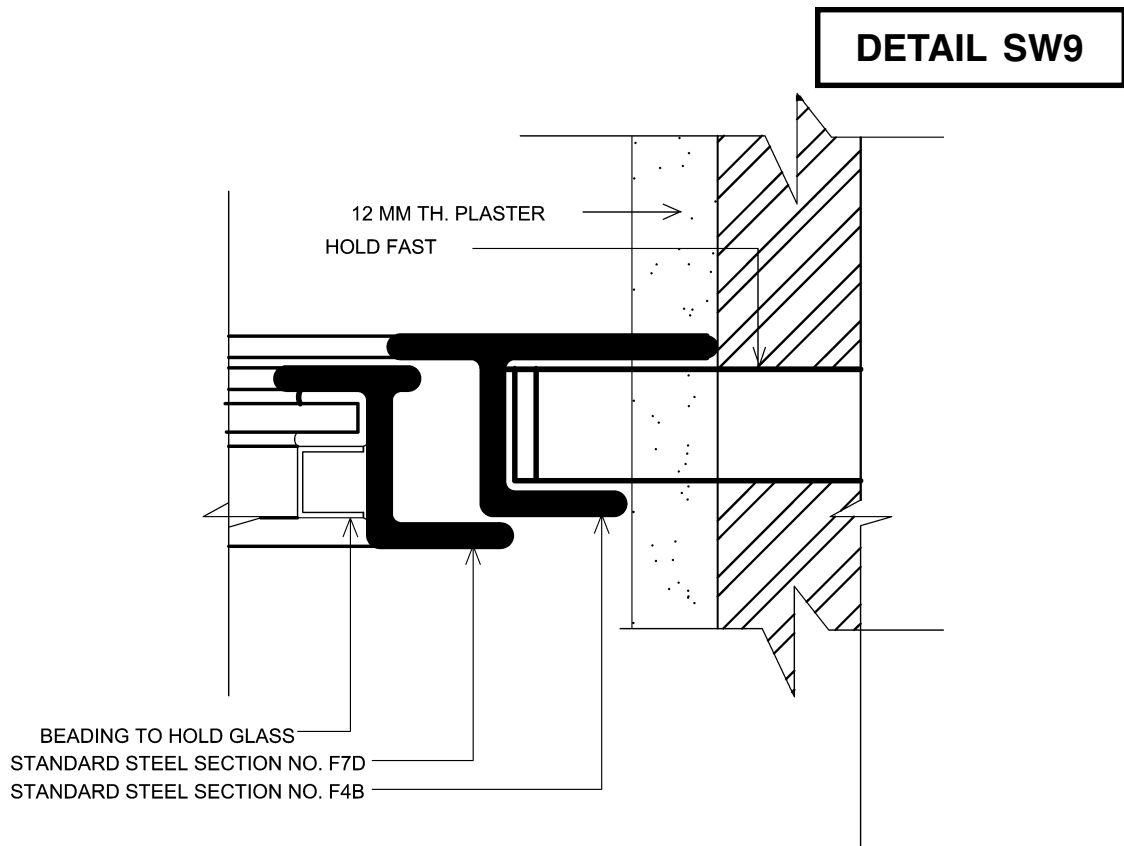


Fig. 46

TYPICAL STEEL SECTIONS – WINDOW

DETAIL SW11

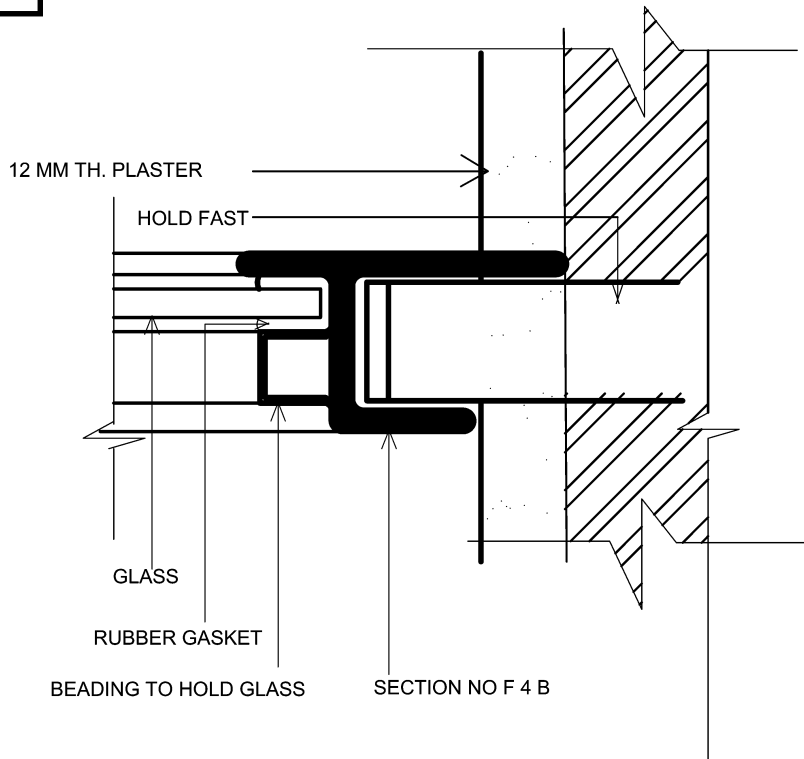


Fig. 47

NOTES

1. Aluminium sections of Jindal and Indal extrusions have been used to depict the various details in the window drawings. These are only representative in nature, other equivalent BIS marked sections can also be used for aluminium windows.
 2. The weight and thickness of the aluminium sections shall be decided by the structural engineer (based on the profile, thickness of glass, and size of opening) and mentioned in the NIT.
 3. The specifications for the general pool accommodation (type I-VI) have been revised vide letter no. 62/SE(S&S)/EEII/AE1/PAR/05-06/01 dated 2-1-06.
 4. The approved standard door shutter sizes and window opening sizes have been issued vide letter no. 120/S&S/Standardisation of Doors and Windows/62 dated 14/3/2006.
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REFERENCES

1. IS:1038-1983 Specifications for Steel, Doors, Windows And Ventilators.
 2. IS:4021-1983 Specifications for Timber, Door, Window And Ventilator Frames.
 3. IS:4351-1976 Specifications for Steel Doors Frames.
 4. IS:1038-1983 Specifications for Steel, Doors, Windows And Ventilators.
 5. IS:7452-1982 Specifications for Hot Rolled Steel Sections For, Doors Windows And Ventilators.
 6. IS:2202-(Part-2) Specifications for Wooden Flush Door Shutters
1983
 7. IS:1003-(Part-1) Specifications for Timber Panelled And Glazed Shutters
1991
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