



**General Specification
for
Drywall Partitions
and
Lightweight Internal Walls**

THIRD EDITION – 2020

Administered by



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SOUTH AFRICA**

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3rd EDITION

This edition is totally revised and replaces previous editions in their entirety. Individual sections have been expanded taking cognisance of the latest manufacturing and standards/requirements in the drywall partition and lightweight internal wall industry.



INTRODUCTION

The South African Building Interior Systems Association (SABISA) currently under the aegis of AAAMSA, promotes that part of the building industry which specializes in the interior finishing, altering and/or refurbishing of buildings. Membership constitutes manufacturers and suppliers of ceiling, partition and access flooring systems as well as sub-contractors who sell and install these specialised systems.

This specification refers to the design, finishes, glass, glazing and installation of Drywall Partition and will enable Architects, Engineers, Quantity Surveyors, Developers and other specifiers to select and specify the appropriate materials. Having the installation done by sub-contractors who are members, or our Association will ensure that the installation meets with the minimum performance standards.

This second edition has been completely revised to meet the latest developments in the Industry. Also attention has been given to safety glazing requirements in accordance with Part N of the National Building Regulations and Building Standards Act 1977 as amended.

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1. Materials

1.1 Plaster Board

Flat gypsum plasterboard shall comply with the requirements of SANS 266. Gypsum ceiling board shall be 6.4 mm, 9 or 9.5 mm or 12 or 12.5 mm or 15mm thick as specified in the specification data or in the scope of work.

Should gypsum board thickness fall outside of the SANS 266 thicknesses specified, the onus is on the manufacturer to prove that the board complies with SANS 266 performance requirements.

6.4mm and 9 or 9.5mm plasterboard is not recommended for partitions. However in curved partitions, double layer 6.4mm or 9/9.5mm may be specified as per manufacturer's specifications.

9/9.5mm, 12/12.5mm or 15mm plasterboard shall have taper-edges when only the joints are to be plastered.

The type of plasterboard shall be specified in the specification data or scope of works.

Pre-finished gypsum plasterboard panels for demountable systems shall be 12 or 12.5 mm thick square edged board or as per manufacturer's specification.

- 1.1.1 Standard Grade Plaster board manufactured in accordance with the latest edition of SANS 266:2003 Edition 2.2 consisting of aerated gypsum core bonded to durable paper liners with unprinted liner suitable for the application of all decorations.
- 1.1.2 Fire Retarded Plaster board manufactured in accordance with the latest edition of SANS 266:2003 Edition 2.2 consisting of aerated gypsum core with suitable additions of fibreglass strands and unexfoliated vermiculite bonded to durable paper liners with unprinted liner suitable for application of all decorations.
- 1.1.3 Moisture Resistant Plasterboard – Plaster board manufactured in accordance with the latest edition of SANS 266:2003 Edition 2.2 consisting of aerated gypsum core with special additives such as silicone, bonded to durable impregnated green paper liners with unprinted liner suitable for application of all decorations.
- 1.1.4 High Impact Plasterboard manufactured in accordance with the latest edition of SANS 266:2003 Edition 2.2 consisting of aerated gypsum core with suitable additions of fibreglass strands, unexfoliated vermiculite and /or additives as per manufacturer specification that enhance durability, bonded to durable paper liners with unprinted liner suitable for application of all decorations.
- 1.1.5 Acoustic Plasterboard manufactured in accordance with the latest edition of SANS 266:2003 Edition 2.2 consisting of aerated gypsum core and additives that enhance acoustic performance as per manufacturer's specification bonded to durable paper liners with unprinted liner suitable for application of all decorations.

1.2 Fibre Cement Boards

- 1.2.1 Non-Asbestos Fibre Reinforced Cement Board – Medium to high density for Internal and External applications manufactured in accordance with SANS 803.
- 1.2.2 Boards containing asbestos are not suitable for internal building purposes. The use thereof is prohibited. The handling of asbestos materials is to be conducted strictly according to legislation.

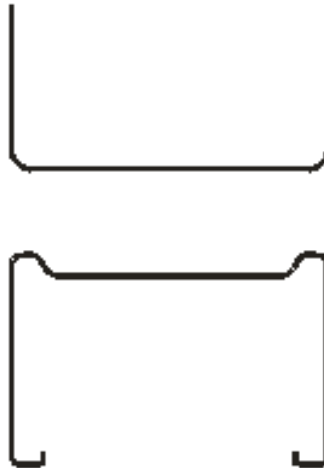
1.3 Metal Studs and Tracks

Galvanized steel studs and tracks, and horizontal framing where relevant, shall be channels of profile, size and thickness as recommended by the manufacturer relative to the structural requirements of the installed system. Studs and horizontal framing shall make provision for electrical conduits as required.

The minimum web size of a partition stud shall be 51mm. The minimum stud flange size shall be 32mm. The minimum web size of a partition track shall be 52mm. The minimum track flange size shall be 25mm. Minimum return lip of stud shall be 4.8mm.

Requirements for steel (refer to ASTM C645):

1. Minimum 230 Mpa yield strength of steel.
2. The minimum thickness is determined by performance requirements, not by a prescriptive minimum thickness. Minimum base thickness of 0.45mm where a yield strength of 230Mpa steel is used, non-rigidized.
3. Steel with thickness less than 0.45mm must be rigidized and shall be supported by manufacturer's performance test data.



Typical Track (TOP) and Stud (BOTTOM) Profile

Manufacturing Tolerances:

(Reference American Standard ASTM 645)

	Item checked	Drywall stud	Drywall track
A	Length	+3mm -6mm	+ 25mm -6mm
B	Web / Flange width	+ 0.8mm -0.8mm	+ 3mm -0mm
C	Flare overbend	+1.6mm - 1.6mm	+ 0mm -4.8mm
D	Hole width centre	+3mm -3mm	N/A
E	Hole centre length	+6mm -6mm	N/A
F	Crown	+ 3.175 - 3.175	+6.35 -6.35
G	Camber	+0.8mm for 300mm -13mm max	+0.8mm for 300mm -13mm max
H	Bow	+0.8mm for 300mm -13mm max	+0.8mm for 300mm -13mm max
I	Twist	+0.8mm for 300mm -13mm max	+0.8mm for 300mm -13mm max
<i>All dimensions shall be taken 300mm from the end of the profile B – outside dimension for stud and inside dimension for track</i>			

Bending moments for steel studs must be as follows:

Studs size (mm)	51			63,5			102		
Moment of Inertia (mm ⁴)								
Stud spacing (mm)	600	400	300	600	400	300	600	400	300
Maximum allowable height with 1x12/12.5mm board (mm)	2516	2993	3294	3080	3526	3881	4446	5037	5576

The above values have been calculated with a board stiffness contribution of XXX with boards on both sides of the studs. These figures are subject to change depending on board stiffness.

Product Identification

Manufacturer’s or suppliers of steel studs and tracks are to be ensure that these products are easily identifiable by means of markings, labelling, etc.

1.4 Timber Studs - Interior Wall Framing

There are two types of interior walls:

1.4.1 Load-bearing walls supporting other building elements

Load-bearing walls shall have studs of the same size and at the same spacing as those recommended for exterior walls, set with the greater dimensions perpendicular to the walls and capped with a continuous top plate of 38mm timber (to suit the stud size) tied into exterior walls at points of intersection. Where openings occur, loads shall be carried across the openings by headers similar to those recommended for exterior walls.

1.4.2 Non-load-bearing walls which carry only their own mass

Non-load-bearing walls may have 114mm x 38mm studs or 76mm x 38mm studs set with the greater dimensions perpendicular to the wall, or 76mm x 50mm studs set with the greater dimension either parallel or perpendicular to the wall.

Studs SHALL be spaced at centres between 400mm and 600mm, depending on the type of wall covering.

1.4.3 For all other applications refer to SANS 10082.

1.5 Galvanising of Steel Components

The level of galvanising required is informed by the level of exposure that the steel framework will be exposed to. (Reference ISO 9223 and European standard EN13964)

ISO 9223 Classification	EN 13964	Indoor environment	Examples	Protection required
C1	A	≤70% relative humidity Varying temperature ≤ 25°C No condensation risk No corrosive pollutants	Heated building with air-conditioning, offices, shops, schools, hotels, residential, sports halls etc.	Z100
C2	B	≤90% relative humidity Varying temperature ≤ 30°C No condensation risk No corrosive pollutants	Unheated buildings where condensation can occur. Sports halls, residential.	Z100
C3	C	≤95% relative humidity Varying temperature ≤ 30°C with condensation risk No corrosive pollutants	Shower rooms, Food production, laundries	Z100 plus organic coating or 20µm per side.
C4/C3	D	>95% relative humidity Varying temperature ≤ 30°C with condensation risk with corrosive pollutants	Swimming pools, Aquatic centres. Industrial Building with harsh environment etc.	Special Measures depending on the environment.

Life expectancy for different zinc coatings and environments as per the Arcelor Mittal data sheet C1.1 for galvanised materials as follows:

(Reference Arcelor Mittal data sheet C1.1 for Galvanised Materials)

Corrosion Zone ³		C0	C1/C2		C3	C4	C5
Environment:		Dry	Dry conditions		Urban Inland/40-100km from HW m ⁴	1-5km from HWm ⁴	Urban Coastal (400mm-1km/Industrial
Application		Interior	Exterior: Desert	Exterior: Rural occasional condensation	Interior: High humidity with some air pollution/ Exterior: Urban inland/mild coastal	Exterior: Industrial inland/Urban coastal	Exterior: Industrial high humidity/Coastal high salinity
Corrosion rate (µm/y)		-0	<0.1	<0.7	0.7-2.1	2.1-4.2	4.2-8.4
Coating	+/-µm per surface	Average expected life (in years)					
Z100	7	20	>15	15	5	N/R	N/R
Z150	10	25	>20	20	7	N/R	N/R
Z200	14	30	>25	25	10	N/R	N/R
Z275	19	50	>25	25	14	Note 5	N/R
Z350	24	50	>25	25	17	Note 5	N/R
Z450	31	50	>25	25	22	Note 5	Note 5
Z600	42	50	>25	25	25	Note 5	Note 5
Note: 1. N/R-Not recommended 2. Terms and conditions apply (Factors) like design, erection and micro-climate could impact expected life) 3. Corrosion zones as per ISO 9223 4. HW M – High water mar							

1.6 Aluminium Extrusions

Extruded aluminium sections shall comprise alloy 6063 or 6261 in temper T5 or T6, of minimum wall thickness of 1.2 mm and strength to meet the structural requirements, and of natural anodised finish unless specified as colour anodised or powder coated in the specification data or in the scope of work.

Anodising shall be in accordance with the requirements of SANS 1407 or SANS 10322.

Powder coating shall be applied by applicators approved by the powder manufacturers, in accordance with the requirements of SANS 1274, SANS 1578 or SANS 10322.

Note: Aluminium door and window framing must not be used in partitions requiring a fire rating in excess of 20 Minutes unless otherwise recommended by the manufacturers.

1.7 Glass & Glazing

Glass shall comply with the requirements of SANS 1263-1 and SANS 10400-N and shall be of thickness and type as specified in the specification data or in the scope of work.

Sub-contractors /glaziers may not deviate from the Tables published in current SANS 10400-Part N unless such deviation is authorized in writing by the competent person (glazing).



Dimensions for vertical glass supported in frame all round in internal walls

Nominal Glass Thickness (mm)	Maximum Pane sizes in sq. m						
	3	4	5	6	8	10	12
Monolithic Annealed Glass	-	1.5	2.1	3.2	4.6	6.0	6.0
Patterned Annealed & Wired Glass	-	0.75	1.2	1.9	2.6	3.4	-
Laminated Annealed Safety Glass	-	-	-	4.1	6.0	7.2	7.2
Toughened Safety Glass	-	3.0	4.2	6.4	9.2	9.2	9.2

Dimensions for vertical glass supported in a frame on two opposite sides in internal walls

Nominal Glass Thickness (mm)	Maximum Span between support in m						
	3	4	5	6	8	10	12
Monolithic Annealed Glass	-	0.65	0.8	0.95	1.3	1.55	2.0
Patterned Annealed & Wired Glass	-	0.4	0.48	0.57	0.78	0.9	-
Laminated Annealed Safety Glass	-	-	-	0.9	1.25	1.5	1.95
Toughened Safety Glass	-	0.9	1.1	1.3	1.75	2.0	2.7

1.8 Safety Glazing

SANS 10400 Part N prescribes the following regarding safety in glass installation:

1.8.1 Transparent Glazing

Where transparent glazing is used and is not likely to be apparent to or suspected by any person approaching it, such glazing shall bear markings that shall render such glazing apparent to such person.

1.8.2 Safety Glazing

1.8.2.1 The panes of all safety glazing material shall be permanently marked by the installer in such a manner that the markings are visible in individual panes after installation.

1.8.2.2 Safety glazing material complying with the requirements of SANS 1263-1 shall be used as shown in the diagrams below.

Note: Figures 2 to 4 illustrate the conditions where safety-glazing materials are required in terms of 1.8.2 above.

All repair and renovation glazing must comply with the provisions of Part N irrespective of the type of glazing used originally.

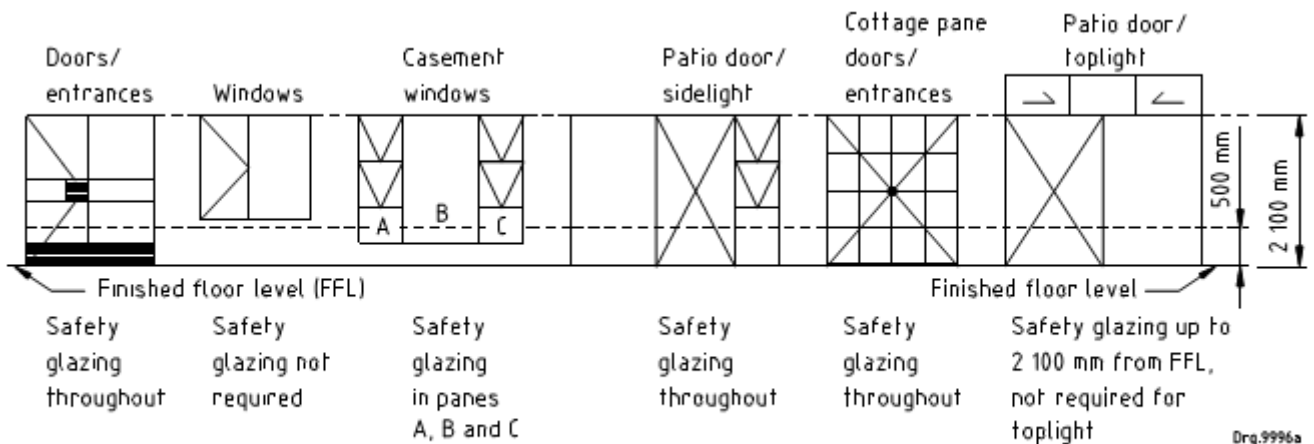


Figure 2 — Examples of safety glazing requirements in doors and windows



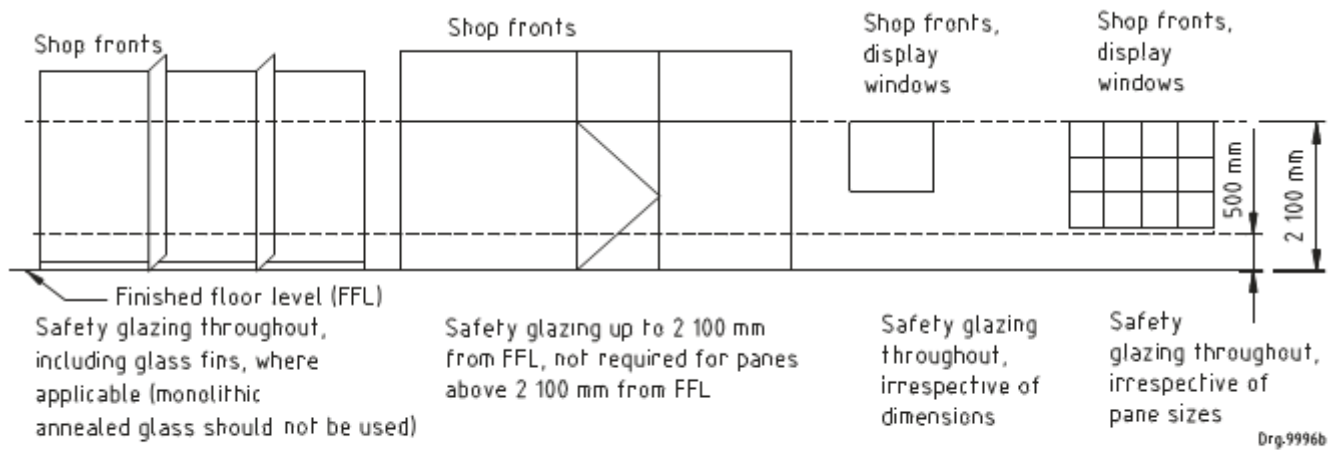


Figure 3 — Examples of safety glazing requirements in shop fronts or display windows

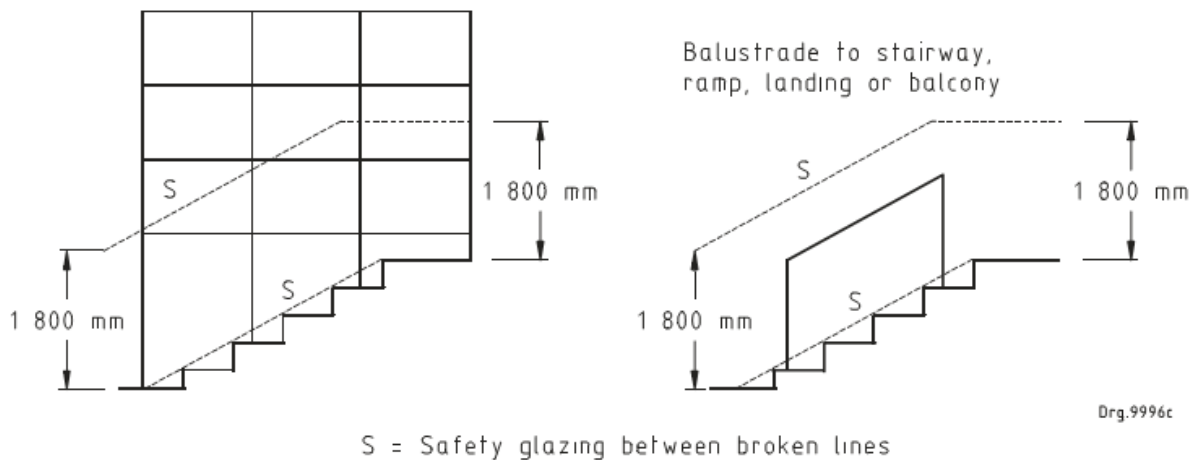


Figure 4 — Examples of safety glazing requirements around staircases and landings

1.9 Insulation

Thermal and acoustic insulation for partitions and ceilings shall be of material and density suitable for the particular application or as specified in the specification data or in the scope of work,

Insulation material shall comply with the following standards:

1. Mineral wool shall comply with SANS 13162;
2. Phenolic foam shall comply with SANS 13166
3. Factory made cellulose glass shall comply with SANS 13167.
4. Factory made wood wool shall comply with SANS 13171,
5. Thermal insulation mats shall comply with SANS 1381-1,
6. Loose fill thermal insulation material shall comply with SANS 1381-2,
7. Reflection foil laminates shall comply with SANS 1381-4,
8. Cellulose loose fill shall comply with SANS 1381-6,
9. Expanded perlite board shall comply with SANS 13169
10. Polyurethane foam shall comply with SANS 53165,
11. Polyester wool shall comply with 1381-1,
12. Expanded polystyrene to comply with the requirements of SANS 1508



2. Construction and Installation

2.1 Design

The design of the drywall partition shall satisfy the requirements of height limitations, board type, fixing, fire rating and sound rating and structural performance as set out in the specification data and in the scope of works. The requirements of height limitations, board type, fixing, fire rating and sound rating shall be as per manufactures recommendations and/or as per rational design by a competent person (design professional).

2.2 Preparation

Partition systems shall be installed in accordance with the recommendations of the manufacturer. The contractor shall, upon request of the principal agent, furnish him with written proof that the manufacturer has been consulted. Proof shall be in form of a letter or other form of confirmation from the manufacturer.

The contractor shall provide declaration that the partition was installed in accordance with the scope of works or specification data Requirements for penetrations description shall be contained in the specification data or the scope of works. Sign-off by the project professional team shall be obtained.

The floor must be capable of taking the dead and imposed loads of the partition system without undue deflection. On raised floors, partitions must be located at the positions and within the maximum loading recommended by the supplier of the floor system; otherwise, additional supports may be required.

The building designer must discuss and provide details of boundary conditions to the partition supplier to ensure compatibility.

The fixing of services and other surface connections, e.g. suspended ceilings, must be designed to consider the movement of the floor.

Partition or drywall systems selection shall satisfy the requirements of SANS 10400-T Fire Protection.

Partition work shall not start before all services are in position and tested. All external walls, windows, exterior doors must be in place and glazed and the roof shall be watertight prior to the start of the partition installation. The building envelope must be closed completely

Tracks and studs shall be isolated from moisture where necessary.

Loading imposed by a partition

Partition loadings are distributed through the perimeter connections to the adjacent supporting structures. The specifier must ensure that no partition is erected which might result in loading greater than that allowed for in the design of the adjacent supporting structure (including for example, platform floors).

The partition manufacturer should provide information on the assembled weight of the partition.

2.3 Construction and Installation

The drywall partitions and/or light weight internal wall system shall comply with the deflection criteria of $L/250$ at 200Pa or as per design professionals' requirements.

The drywall partitions and/or light weight internal wall system shall be constructed and installed in strict accordance with the material suppliers' recommendations including (but not limited to):

For heights not exceeding 4.2m standard track may be used, exceeding 4.2m height requires deep track.

Drywall partitions that cannot be positively fixed at the top may require structural support and therefore the supplier or manufacturer must be consulted for specification.



The minimum board thickness shall be:

Plasterboard:

12 / 12.5mm or 15mm thickness in case of standard, fire resistant, high durability, acoustic and moisture resistant plaster board when used in conjunction with metal/timber studs.

The minimum bite of a drywall screw into a steel stud shall be 10mm. All screw spacing must not exceed 220mm centres. Phosphorous coated screws are for interior use whereas zinc coated screws are for exterior use. Fine thread screws are to be used when fixing to metal and coarse thread screws are to be used when fixing to timber.

Self-drilling screws remove excess material in the fixing process whereas sharp point screws displace the material.

Fibre Reinforced Cement Boards:

9mm in case of fibre cement reinforced board when used in conjunction with timber or steel studs constructed in accordance with manufacturers specifications.

2.3.1 Supervision

The supervision system must establish, document and maintain records for an agreed period of time for the following:

- a) An inspection system capable of producing objective evidence that the materials used, and the construction method conform to the specified performance level; the supervisor must ensure that the essential inspection requirements are satisfied throughout all phases of the work;
- b) Records of all inspections and tests of all service installations incorporated in the partition, including copies of all tests certificates and clearances to proceed;
- c) A system to check conformity of materials with the specification;
- d) A procedure for controlling material that does not conform to the specified requirements; these procedures must include provision for their identification, segregation and disposal or return
 - a) Of unfit material and components;
 - e) a routine to agree and obtain a method of approval to ensure perimeter fixings, fire stopping, and other sealing is completed prior to handover, conforming with the partition specified, so that the partition meets the tested criteria applicable;
- f) A programme for the completion of the installation works and completion of the partition
- g) A system to record all remedial, variation work, modifications and handover certification.

Prior to work commencing, a sample of each type of partition should be erected in a sample room or area and the standard of materials and workmanship approved before work proceeds. Where practicable the sample partitioned should form part of the permanent works.

Proprietary partitions must be erected in accordance with the manufacturer's instructions and must, where appropriate, conform to the tested construction in accordance with the test reports for the sponsors systems for test carried out in accordance with this standard.

Any alteration or cutting of the partition by service installers must not be allowed to impair the structural stability and performance levels of the partitions. The method of sealing around services must be agreed with the partition contractor. The provision of fixings and chases for services within masonry partitions must be in accordance with this standard.

Where framed and stud partitions are to be erected on a prepared floor, whether screeded or monolithic, all floors in the area must be complete. If the floor is not thoroughly dried out, a damp-proof course, the full length and thickness of the partition, must be installed under the base member of the frame.

Where framed partitions are erected on screed depth haunching's, timber plates, etc. before the floor screeds are laid, care must be taken to avoid damage and the ingress of moisture during both the laying and drying of the screed. All partitions which penetrate the ceiling zone must be erected before the ceiling is installed.

Where facings or infillings do not extend to the structural soffit, provision must be made for the insertion of any cavity barriers, fire-stopping and acoustic barriers.

Coordination with the installation and testing of services is essential.



Framed partitions which contain services must be erected in two stages:

- a) Erect partition frame and clad one side with boards;
- b) After the service installation has been tested and accepted, clad the remaining side of the partition and prepare and finish as soon as possible.

Where framed partitions are required to support heavy fittings:

- a) Ensure framing members are sufficiently strong and correctly positioned;
- b) Erect partition in two stages as above and add strengthening members prior to completing the facings or infillings.

Floor finishes laid after the erection of the partitions must be coordinated with other finishing trades and particularly with the fixing of skirting, door sets, junctions between flexible floor finishes and skirting, door frames and architraves

2.3.2 Setting out

Where the partition or lining is continuous and independent of the structure, the deviation from the agreed setting out positions must be within:

- a) The offset on plan from an agreed line or position, measured at the setting out level at ceiling or floor ± 3 mm
- b) The offset from vertical, measured above or below the setting out position at ceiling or floor ± 5 mm

2.3.3 Control Joints

Control joints may be required in the ceiling/partition to relieve stresses induced by expansion and contraction of the structure. Partitions must be designed to accommodate anticipated horizontal and vertical movement in the building, e.g. structural movement. Control joints are visible and may impinge on the aesthetics of the building. Consequently, the position of the control joints must be determined by the architect/designer.

The position and size of the control, joints shall be specified in the specification data or scope of works.

Control joints in partitions shall be specified where any of the conditions listed below exist:

- a) Where excessive movement is likely to occur.
- b) Where a partition traverses' movement joint within the surrounding structure. The width of the partition control joint shall be equal to that of the structure.
- c) Where a partition is exposed to variable or extreme temperatures and the wall runs in an uninterrupted straight plane exceeding 10m in length NOTE: Full height door frames may be considered as a control joint. The width of the control joint shall be a minimum of 7mm.
- d) Where the building/substrate structural system/material changes.
- e) A control joint is desired or incorporated as a design accent or architectural feature.

The designer shall provide details of the movement joints to the partition supplier for consideration before commencement to works. The control joint shall be installed in accordance with manufactures specification.

2.3.4 Deflection Heads

The need for deflection heads shall be specified in the specification data or scope of works. Deflection allowance shall be specified by the project structural engineer where necessary.

Studs shall be cut shy of the floor to soffit height in order to accommodate the specified deflection. Deflection heads shall be sealed maintain partition fire and acoustic integrity. Fasteners/fixings shall be located so as not to impede the movement of the track in the case of deflection.

2.3.5 Wet area or Humid conditions

Surfaces exposed intermittently to high levels of humidity, such as in bathrooms and shower rooms, must be adequately protected from humidity and moisture. The treatment must preferably extend to the ceiling height to provide a complete protective membrane. Abutting surfaces must be adequately sealed to prevent moisture penetration to concealed areas.



Partitions must be specifically designed for use in those areas where there is a requirement for direct contact with water, either in the operation of the area or the need to wash the surface of the partition and/or the adjacent floor. Ideally, continuous surfaces of moisture-resistant material must be selected, ensuring that the perimeter joints can be sealed to provide an impervious structure. Any skirting must be sealed to the partitions and the floor and at all other junctions.

Moisture resistant board or board with equal or superior performance when tested in accordance with SANS 266 shall be used in wet areas.

The requirements for wet or humid areas shall be specified in the specification data and scope of works.

2.3.6 Accuracy of finished partition and openings

Correct interpretation and application of the information contained in the table is important in order to avoid disputes.

Permissible deviations in drywall partitions and lightweight internal walls

DESCRIPTION	PD, mm	
	Grade	
	II	I
Position on plan PD of fair-faced specified side of wall from the designed position	±15	±10
Length Up to and including 5m	±15	±10
Over 5m, up to and including 10m	±20	±15
Over 10m	±25	±20
Height Up to and including 3m	±10	±5
Over 3m, up to and including 6m	±20	±15
Over 6m	±25	±20
Straightness. max. In any 5m (not cumulative)	15	10
Verticality In any 2m	±10	±5
In any 5m	±15	±10
Finished surfaces PD of any point from a 2m straight-edge placed in any direction of the wall, max.	6	3
Notes: PD – Permissible Deviation Grade I and II are grades of accuracy defined in SANS 10155 as follows: Grade I accuracy may necessitate the use a special method, or materials, or both, and will require a close degree of supervision and control; Grade OII accuracy is suitable for the major proportion of building work.		

The grades of accuracy in the table above are defined in SANS 10155: Accuracy in Building. SANS 10155 is a code of practice which covers the method of measurement and accuracy of dimensions required for the setting out of structures and for completed building work. SANS 10155 prescribes permissible deviations for the positioning and dimensions of the various elements.

SABISA guideline stated that the specifier must elect the degree of accuracy and the level of finish at the time of tender in accordance. The tolerances must be written in specific terms in order allow the contractor to present their most accurate and competitive bid. It is essential to establish a benchmark for the quality of finish which can be referred to throughout the contract.

If the specifier did not prescribe the required level of finish the minimum requirements of Grade II in accordance with SABISA Guidelines and SANS 10155 must be applied.

The following paragraphs are aimed at assisting the specifier or contractor how to correctly interpret and apply information contained in the above table. Grade II level of finish will be used in all the explanations.



Position on Plan

Position of plan sets out the maximum allowable deviation in relation to the wall position indicated on the Architect's drawings. For Grade II finish, the wall shall be positioned plus or minus 15mm from the position shown on the Architect's drawings. That is, if the wall is shown on the drawings at 3000mm from the setting out point, the final position of the built wall shall not be more than 3015 or less that 2985mm from the setting out position. This does not mean that one end of the wall can me 3015mm away from the setting out point and the other end of the wall can be 2815 from the setting out position. One must refer to straightness deviation to get a full interpretation of the maximum allowable deviation regarding tow ends of the wall.

Wall Straightness

This part refers to straightness in plain view. The position of two ends of a 5m wall or any two points 5m apart on a long wall shall not be more than 15mm from apart.

This deviation is not cumulative. This means that if measurements are taken from any two points that are more than 5m apart, the deviation shall not exceed 15mm. In other words, if the distance between the two points is 10m, the deviation shall not be 30mm (15mm + 15mm). The maximum allowable deviation irrespective of any length is 15mm.

If a wall is 1m long, what is the maximum allowable deviation? A reasonable approach is will be to consider how the final wall position will be viewed by the end user. If 15mm deviation is applied to a wall that is 1m, the inaccuracy will be clearly visible and in most cases the wall will not be accepted by the end user. One must interpret the permissible deviation in terms of the maximum allowable angle or that the permissible deviation is accumulation for lengths less than 5m. This can also be interpreted as; for every 1000m length of wall, the permissible deviation is 3mm. The 3mm deviation per 1m length is cumulative up to a maximum length of 5m.

Straightness and Position on plan

Straightness and position on plan must always be read together. If the position on plan is read alone, one may reach a conclusion that the wall can be + 15mm on one end and -15mm on the other end. This represents a straightness deviation of 30mm which is outside the permissible deviation of 15mm.

To ensure that the position on plan deviations and the straightness deviation are met, one must use one end of the wall to establish if the wall is within the required deviation and then establish if the wall is within straightness deviation from the point which was used to establish the position on plan deviation. This is shown in figure 1 and 2 below.

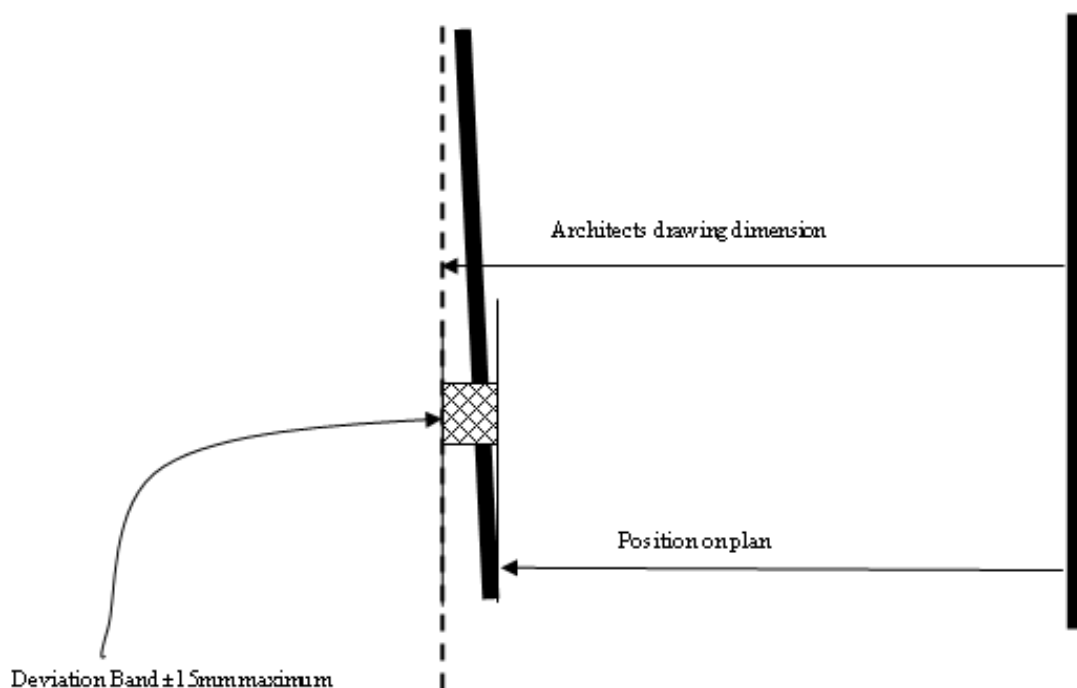


Figure 1: Step 1- Determine position on plan



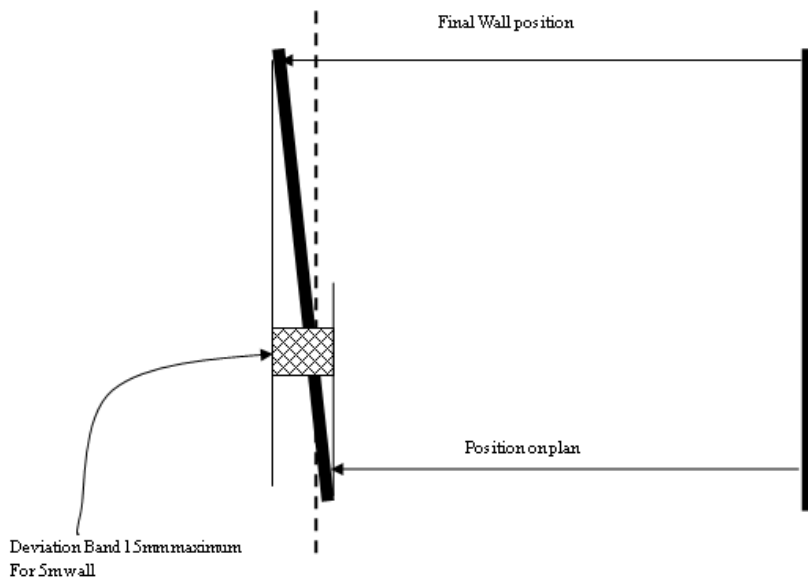


Figure 2: Step 2- Measure the wall straightness

Wall Length

The permissible deviation on length refers to the horizontal dimension of the wall measured from one end of the wall to the other end of the wall. Consideration must be given to the length of the wall and the corresponding maximum allowable deviation.

Wall Height

The permissible deviation on height refers to the vertical dimension of the wall measure from the base of the wall to the head of the wall. Consideration must be given to the height of the wall and the corresponding maximum allowable deviation for the specific measured height.

Verticality

Verticality of the wall refers to the plumbness of the wall. If measurements are taken in any 2m of the wall, the wall shall not be out of plumb by more than 10mm.

Does this mean that a wall that is 1m high can be 10mm out of plumb? The most reasonable answer is “No”. A reasonable approach is to consider how the plumbness of the wall will be viewed by the end user. If 10mm deviation is applied to a wall that is 1m high, the inaccuracy will be clearly visible and in most cases the wall will not be accepted by the end user. Applying similar principles used determining straightness of walls less than the length give in the table above. This means that for a 1m high wall, the maximum allowable deviation is 5mm. This is cumulative to a maximum of 2m. If measurements are taken in any 5m of the wall, a new rule shall be applied.

Finished surfaces

If a 2m straight edge is placed against the wall. The difference between the highest point and the lowest point shall not be more than 6mm. In this scenario, the straight edge must be used as a reference line. If two measurements are taken, one from the highest point and the other from the lowest point, the difference between the two measurements shall be less than 6mm.

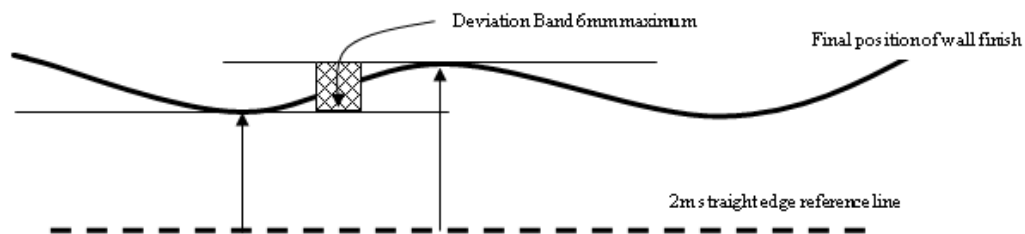


Figure 3: Final finish deviation



2.3.7 Fixing Plasterboard

Gypsum plasterboard shall be fixed to metal framework using fine thread drywall screws and to timber framework using course thread drywall screws. The minimum bite of the screws shall be 10mm into metal framework and 20mm into timber framework

Stagger the boards along plasterboard butt joints. Fix working from the centre of each board. Position screws not less than 13mm from cut edges and 10mm from bound edges of boards.

Screws shall be spaced at maximum 220mm centres. The screw heads shall be flush with the surface of the boards and shall not break the liner of the boards. The requirements for fixing of boards shall be specified in the specification data and scope of works.

2.3.8 Joints

Board joints on opposite sides of the framework shall be staggered. Joints in inner and outer boards shall be staggered.

Horizontal joints in a fire rated partition shall be supported and fixed to a framework. Horizontal joints on opposite sides of the framework shall be staggered by at least 600mm.

Joints in vinyl faced board shall be covered in a suitable manner.

Suitable movement joints in partitions shall be provided to coincide with movement joints in the structure.

In areas exposed to extreme temperature changes, suitable movement joints shall be provided in the partitions. The maximum interval for the movement joints shall be in accordance with the manufacturer's specification.

The requirements for movement joints shall be specified in the specification data and scope of works. Movement joints in wet areas shall be appropriately sealed.

2.3.9 External Corners

External corners in a partition shall be reinforced in accordance with the manufacturer's specification. The reinforcing of partition corners shall be specified in the specification data and scope of works.

2.3.10 Partition Openings

Door opening shall be suitable reinforced in accordance with the manufacturer's specification. The maximum allowable door mass shall be indicated.

The reinforcing of door openings shall be specified in the specification data and scope of works. Cladding around door or window openings shall be installed in a manner that eliminated cracking around the opening.

Door assemblies must meet the appropriate performance requirement for the partition. Glass and plastics glazing sheet material of a suitable type, thickness and size must be selected to provide an appropriate degree of safety, taking into account the intended use. Types of glass are classified in SANS 10400-N.

2.3.11 Partition heads

The building designer must discuss and provide details of head conditions to the partition supplier to ensure compatibility.

Structural soffits of floors or roofs must be used to provide anchorage, or where necessary additional support at the head of the partition must be used to provide the required stability. It must be noted that the fixing of partitions to the underside of a suspended ceiling, care must be taken to ensure that the head fixing does not impair the stability performance of the partition or ceiling

Where the deflection requirements of the floor are considered unusual or excessive, the partition supplier must be advised to ensure that the partition system can accommodate such movements. The fire performance and sound rating shall be maintained at the deflection heads. The deflection head shall be installed in accordance with manufacturer's specification.

The requirements for deflection heads shall be specified in the specification data and scope of works.



2.3.12 Partition base

The building designer must discuss and provide details of base conditions to the partition supplier to ensure compatibility.

Partition bases shall be sealed to maintain fire and acoustic performance. Sealing of partition bases shall be in accordance with the manufacturer's specification.

Partition boards shall be fixed to the bottom track/channel.

Sealing of partition bases shall be specified in the specification data and scope of works.

2.3.13 Partition Abutments and terminations

The building designer must discuss and provide details of boundary conditions to the partition supplier to ensure compatibility.

Partition abutments shall be sealed to maintain fire and acoustic performance. Sealing of partition abutments shall be in accordance with the manufacturer's specification.

Sealing of partition abutments shall be specified in the specification data and scope of works. Partition terminations shall be specified in the specification data and scope of works.

2.3.14 Curved partitions

Curved partitions shall receive Level 5 finishing and shall be installed in accordance with manufacturer's specification.

2.3.15 Finishes

Drywall surfaces shall be finished in a manner suitable for its intended use or as specified in the specification data or in the scope of work. The levels of finishes shall be indicated as follows:

Selection of Surface Finishing for Drywall Partitions and Lightweight Internal Walls

Level	Application	Description
1	Temporary constructions.	No jointing or finishing at all.
2	Frequently used in plenum areas above ceilings and in areas that are generally concealed.	All joints shall have the tape embedded in jointing compound, but tool marks and ridges are acceptable.
3	This finish is suitable where moisture resistant boards are used as a substrate for tiling and may be used in garages or warehouse storage where surface appearance is not of primary importance.	All joints, angles and accessories shall have one coat of jointing compound applied. All screws heads to be spotted. Surface shall be free of excess jointing compound, but tool marks and ridges are acceptable.
4	This level is suitable for areas which are to receive heavy or medium textured paint finishes, or where heavy grade wall coverings are to be applied. Where lightweight vinyls are to be used all joints etc. should be carefully sanded to provide a smoother surface.	All joints, angles and accessories shall have two separate coats of jointing compound applied. All screw heads to be spotted. All jointing compound shall be smooth and free of tool marks and ridges. It is recommended that all the areas of jointing compound receive a coat of suitable* based Plaster Primer before finishing. *Refer to paint manufacturers recommendations
5	This level should be used where gloss, semi-gloss or matt non-textured paints are specified. Any drywall that is subjected to critical lighting shall be finished to this level.	All joints, angles and accessories shall have two separate coats of jointing compound applied. All screw heads to be posited. A thin skim coat of plaster shall be applied to the entire surface of the drywall. The surface shall be completely smooth and free of any marks and surface blemishes. The entire surface of the drywall shall receive a coat of oil-based plaster primer before final decoration.



Wall Covering

Wall covering shall be specified by the Architect. Wall coverings shall be of appropriate type to suit the expected traffic in the designated areas. Any specialised finishes are to be referred to manufacturers for their recommendations.

Anodising

All anodizing shall be executed in strict adherence to the latest edition of SANS 1407 (Architect to specify colour and anodic film thickness to a minimum of 10 microns)

Powder Coating

All powder coating shall be executed only by applicators approved by the specified powder manufacturers and shall be strictly in conformance with the latest edition of SANS 1247 (Architect to specify type and colour).

Tiling

All tiling shall be executed on surfaces which are true, firm and free of dust and oil. Priming adhesive application and grouting shall all be done in strict accordance with the tile adhesive manufacturers' recommendations.

Ceramic tiles can be applied to drywalls or the surface of lightweight partition systems to dado level or above. Tiling can be carried out in any type of building either in dry areas or in areas subject to intermittent moisture conditions. Typical applications include shower areas, toilets, bathrooms, cloakrooms and kitchens.

For all paper lined gypsum boards, a maximum of 20kg/m² tiles are permissible or as per plasterboard manufacturer specification.

Painting

The painting of surfaces shall be executed in strict accordance with the paint manufacturers' recommendations.

2.3.16 Fixtures and Fittings

The designer must verify that the partition in its finally selected form will be capable of carrying the fittings and their loading. Consideration must be given to the effect of superimposed loads upon partitions required to support fixtures and fittings.

Whenever there is a requirement for a partition to support additional loads, to establish its suitability, it is recommended that a representative sample partition is tested by the methods given in BS 5234-2. These are optional tests and may be used to establish the suitability of a partition to support additional loads such as the following:

- a) loadings from lightweight fittings, e.g. coat hooks, small fire extinguishers, towel holders, etc, supported on single anchorages (see lightweight anchorage tests);
- b) loading from heavyweight fittings, for example, lavatory basins, wall cupboards and similar fittings (see heavyweight anchorage tests).

2.3.17 Protection Against Mechanical Damage

In high risk areas, consideration must be given to avoiding narrow corridors, tortuous circulation routes and inadequate size of door openings, which are some of the causes of damage by mobile equipment to partitions.

Consideration must be given to providing additional protection to surfaces where high wear or damage is anticipated. Such protection may then be replaced, when necessary, as part of the maintenance procedure.

Examples include:

- a) protection at skirting level to withstand the method of cleaning envisaged;
- b) protection at exposed arises, particularly in areas where mobile equipment is in use;
- c) protection at chair-rest level, in waiting and other areas where movable chairs are likely to be placed around the walls;
- d) protection along corridors used by mobile equipment, e.g. wheelchairs and trollies.

The protection required may take the form of protective finishes, buffer rails and corner guards. Consideration must be given to the long-term availability of factory produced finishes where additional or replacement components might be required and that further protection may be required after the building has been occupied when it is known more precisely where and at what levels other damage may occur. Protection to door sets, their ironmongery and internal glazing must be considered in conjunction with that proposed for partitions.



2.3.18 Demountable Partitions

Demountable partitions shall be floor to ceiling partitions or soffit consisting of a modular framework of exposed aluminium studs and tracks, infilled with panels of plasterboard, composite wood board and/or glass, as specified in the specification data or in the scope of work.

- Demountable partitions shall be installed as per manufacturer's specification.

- Demountable partitions shall be fixed using removable fixing methods.
- Studs shall be spaced at maximum 1 200 mm.
- Rigidity of partitions shall be ensured by means of horizontal spacers between studs at 700 mm centres.
- Panels shall be removable without disturbing adjacent modules.
- Panels, door frames and windows shall be held in position with aluminium beads and trim.
- Compressible seals shall ensure acoustic sealing and quiet closing of doors.
- Reveals of openings shall be finished with aluminium trim.

3. Partitioning Performance

3.1 Fire Rating

The National Building Regulations with particular reference to SANS 10400-Part T classifies the performance of materials in respect of fire resistance in categories of 20, 30, 60, 90, 120, 180 and 240 minutes. Fire rating index shall be as specified in the specification data and in the scope of work, and shall apply to the constructed partition including insulation, doors, windows, louvres etc.

In order that the required performance of the system may be realized in practice, the adjoining structures and junctions must have at least equivalent fire protective performance. Equally the installation of a partition must not reduce the fire protection of existing structures

Ceiling & Partitioning Contractors and glaziers are not fire experts and it is therefore the onus of the client/specifiers to indicate the partitioning requirements in respect of location and degree of resistance to fire in minutes. According to the SANS 10400-Part T, a Competent Person must specify the fire requirements of partitioning in respect of resistance to fire.

Materials may differ from manufacturer to manufacturer but should a material tested in accordance with SANS 10177-Part 2 have a fire resistance of say 32-minutes and a similar material from an alternative source have a fire resistance of say 36 minutes both will be classified as having 30-minutes fire resistance.

Specifiers are encouraged to obtain relevant certification or test reports from the material manufacturers to confirm the product performance. Manufacturer or supplier should be consulted when a control joint is required in a fire rated partition.

Drywall partitions may be used as tenancy separating elements, division separating elements, occupancy separating elements and partition walls as stated in SANS 10400-T. Please refer to relevant standard for further information.

Any movement joint in a division-separating or occupancy-separating element shall have the same fire resistance rating as that required for the separating element.

No combustible roof components or unprotected non-combustible structural component shall penetrate any occupancy-separating elements or division-separating elements between occupancies and divisions. Any non-structural element which penetrates the division-separating or occupancy-separating element, such penetration shall be sealed or protected to prevent any spread of fire to the same level of fire resistance as required by the separating element.

NOTE: All fire penetration systems shall be tested in accordance with SANS 10177-2.

Table 14- Fire resistance of hollow stud construction of steel timber studs

1	2	3	4	5	6	7	8	9	10	11
Type of wall	Type of stud	Stud spacing	Size of stud	Cladding thickness ^a mm						
Gypsum plasterboard: Non structural	Steel	300/ 400/ 600	51 x 35	1 x 6	1 x 9	1x12.5	1x15 ^b	2x12.5	2x12.5 ^b	2x15 ^b
			58 x 35	d	d	30	60	90	120	
			63.5 x35	d	d	30	60	90	120	
	Timber	600	102 x35	d	d	30	60	90	120	
			146 x 35	d	d	30	60	90	120	
			75 x 38	d	d	30	60	90	120	
Gypsum plasterboard: structural	Timber	400	114 x 38	d	d	c	c	c	c	
		600	114 x 38	d	d	c	c	c	c	
	Steel	600	150 x 40	d	d	d	30	c	c	60

NOTE 1 Screw spacing for each layer of cladding should not exceed 220mm
NOTE 2 Joints of such layers should be staggered and all joints shall be fixed to the framework.
NOTE 3 Boards to be fixed to manufacturers specification
NOTE 4 All joints shall be covered with jointing compound or the be skimmed.
NOTE 5 These combinations shall be taken as guidelines only because;
a. The combination might have to be adjusted for walls more 3.6 metres high. Consult manufacture for additional guidance.
b. Differences in the core of the cladding material (gypsum) might lead to different fire resistance results.
c. Before installation, fire resistance test results should be obtained from the manufacturers.
a – Same thickness or combination of thicknesses-face and reverse side.
b – Glass fibre reinforced gypsum boards which meet SANS 266 core adhesion at high temperature and of minimum surface density 13.5kg/m².
c – This combination has not yet been tested
d – not applicable

Table 15- Fire resistance of structural steel columns

1	2	3	4	5	6	7
	240	180	120	90	60	30
	Minimum thickness of protection mm					
<p>Hallow Protection</p> <p>Glass reinforced gypsum plasterboards only.</p> <p>The cladding thickness of a steel column is strongly influenced by the size of the steel column. The heating rate of a steel element has great effect on its fire resistance. A high mass section will heat up slowly (and thus normally have a higher fire resistance) than a slender section. The influence of the massiveness of the profile is called 'Section Factor' :</p> $\text{Section Factor} = \frac{mA}{V}$ <p>where: <i>m A</i> is the area of the lateral surface of the steel exposed to fire (m2) <i>V</i> is the volume of steel of the element</p> <p>Fire resistance information should be obtained from the manufacturers.</p>	c	c	3x15 ^b	2x15 ^b	2x12.5 ^b	1x15 ^b
<p>NOTE 1 Screw spacing for each layer of cladding should not exceed 220mm</p> <p>NOTE 2 Joints of such layers should be staggered and all joints shall be fixed to the framework.</p> <p>NOTE 3 Boards to be fixed to manufacturers specification</p> <p>NOTE 4 All joints shall be covered with jointing compound</p> <p>NOTE 5 Differences in the core of the cladding material (gypsum) might lead to different fire resistance results. Before installation, fire resistance test results should be obtained from the manufacturers.</p> <p>^a – same thickness or combination of thicknesses-face and reverse side</p> <p>^b – Glass fibre reinforced gypsum boards</p> <p>^c – This combination has not yet been tested</p> <p>^d – not applicable</p>						



Framing required for fire resistance in excess of 30-minutes must be manufactured in steel or hard wood of appropriate volume.

Where the partition is required to provide fire resistance any voids above or below the partition, e.g. ceiling plenum or raised floor void, must be subdivided with cavity barriers of equal or superior fire performance in the plane of the partition.

When tested in accordance with SANS 10177 glazing materials may perform as stated in the below table.

Fire Resistance Performance of Glass	
Glass Type	Fire Resistance in minutes
Laminated safety glass having PVB/resin interlayer	3 to 6
Laminate glass having intumescent interlayer	Up to 120
Georgian wired glass	Up to 60
Borosilicate and calcium silicate glass	Up to 120
Toughened safety glass	3 to 6
SIGU (double glazing) having PVB/resin laminated safety glass	30

Partition penetrations

All penetrations shall be sealed with an appropriate sealant with a fire rating that is more than or equal to that of the partition. The fire sealant shall be installed in accordance with the sealant manufacturer’s specifications. The contractor shall, upon request of the principal agent, furnish him with written proof that the manufacturer has been consulted. Proof shall be in form of a letter or other form of confirmation from the manufacturer.

Penetrations more than 50mm diameter shall be suitably framed such that the partition board can be suitably fixed to the framing members around the opening. The requirements for penetrations through a partition shall be specified in the specification data and scope of works.

Fire dampers with a fire rating that is more than or equal to that of the partition shall be installed in areas where air-conditioning ducts penetrate a fire rated partition.

3.2 Sound Performance

Due to the nature of manufacture and installation of plasterboard and fibre cement boards the sound rating for drywall partitions and lightweight internal walls may differ from site to site. This is due to differentiating sound transfer and flanking in different environments. Manufacturer’s sound specifications are based on ideal laboratory conditions.

Specifiers are encouraged to obtain relevant specifications and confirmation from suppliers of the materials and systems to confirm the individual systems performance. Acoustic performance requirements must be specified by the professional team of the building project.

In respect of Glass refer to AAAMSA Selection Guide for Glazed Architectural Aluminium Products.

Sound rating of a partition shall be tested in accordance with SANS ISO 140-3. Where sound rating indexes are specified, gaps between partition, floors and walls, columns or penetrations shall be appropriately sealed. Flexible seals must be specified around pipes which are subject to movements.

The designer and user must consider the sound insulation of partitions in conjunction with the purpose and detailed design of the building. Advice on sound insulation in and of buildings is given in SANS 10218-2.

Where partitions contain glazed areas, doors, etc., both users and designers must realize that the sound insulation potential of the partition as a whole is considerably reduced unless the glazing or door acoustically matches the rest of the partition.

If good sound insulation is important, doorframes and thresholds must be provided with effective seals and glass panels must have thicker single glazing, double glazing, double windows with a wide air space and airtight seals, or acoustic laminated glasses, or a combination of these. Care must be taken to ensure that, in practice, flanking transmission does not severely limit the expected performance, especially laboratory measurements which indicate a high-performance standard in excess of Rw 55dB.

When a partition that is to provide sound insulation is to be erected on a raised floor, consideration must be given to the sound insulation characteristics of the platform floor; if lower than those of the partition, it may be necessary to install a sound insulating barrier in the floor void.

When the purpose of an installed partition is to provide sound insulation, consideration must be given to the sound insulation characteristics of the ceiling. Where the sound insulation properties of the ceiling are lower than those of the partition, a barrier must, if necessary, be introduced in the void to maintain the required sound insulation.

In applications where high sound insulation is required and where other onerous conditions may apply, such as machinery noise, the lower frequency performance of the partition, as well as the need to minimize flanking paths, must be taken into account. In these circumstances the advice of an acoustic consultant is recommended.

The designer must have desirable levels of performance in mind when selecting a partition for a particular condition and environment in the building. Reference must be made to the results of laboratory and field tests that are readily available from partitioning manufacturers.

Suggested minimum sound insulation performance levels for privacy in some occupational conditions are given in SANS 10218-2.

3.3 Height Performance

Partitions and their fixings must be capable of resisting, with adequate safety factor and stiffness, differential pressures caused by air movement around and through the building. The maximum allowable height of the partition shall be based on the deflection criteria of L/250 at 200Pa.

A partition, by its nature, takes its height and length from the structure, which may be new or existing, into which it is built. For practical purposes no upper height limit exists. The manufacturers must state the maximum height limit of their partition systems.

The height of the partition shall be specified in the specification data and scope of works. The maximum allowable height of the partition shall be in accordance with the manufacturer’s specification or designed by a competent person.

3.4 Structural Performance

The structural performance of the partition shall be specified in the specification data and scope of works. The structural performance of the partition shall be in accordance with the manufacturer’s specification.

The frequency and intensity of the loads on a partition vary and it is convenient to grade them by the level of activity in adjacent spaces and the degree of care likely to be exercised by people in the area, see table below

PARTITION GRADES BY CATEGORIES OF DUTY		
Light duty (LD)	Adjacent space only accessible to persons with high incentive to exercise care. Small chance of accident occurring or of misuse	Domestic accommodation
Medium duty (MD)	Adjacent space moderately used primarily by persons with some incentive to exercise care. Some chance of accident occurring and of misuse	Office accommodation
Heavy duty (HD)	Adjacent space frequently used by the public and others with little incentive to exercise care. Chances of accident occurring and of misuse	Public circulation areas Industrial areas
Severe duty (SD)	Adjacent space intensively used by the public and others with little incentive to exercise care. Prone to vandalism and abnormally rough use	Major circulation areas Heavy industrial areas

Partitions must be sufficiently robust to withstand, to varying degrees, the following conditions and may be assessed by testing a specimen partition by the methods described in BS 5234.

- a) Bending caused by people leaning on the partition or by a person standing on a ladder leaning against it (see stiffness test).
- b) Impact caused by people falling against the partition (see soft body impact tests).
- c) Impact caused by trolleys, wheelchairs and equipment (see hard body impact tests).
- d) Door slamming caused by wind or people closing a door energetically (see door slam test).

4. Inspection

Wall and ceiling areas abutting window mullions or skylights, long hallways, or atriums with large surface areas flooded with artificial or natural light are a few examples of critical lighting. Critical lighting (especially side-lighting) may reveal even minor surface imperfections. Light striking the surface obliquely, at a very slight angle, greatly exaggerates surface irregularities. If critical lighting cannot be avoided, the effects can be minimized by skim coating the entire wall or by decorating the surface with medium or heavy textures (paint or vinyl's). The use of drapes and/or blinds can also be used to soften shadows. It is also important to remember that during the construction phase of a building the lighting is often not fully functional and the appearance of the drywall could vary considerably once this is switched on.

In general smooth non-textured finishes highlight surface defects and textures help to hide minor imperfections.

SABISA General Specification for Suspended Ceilings, states that an absolute accuracy exists only in theory, tolerable degrees of inaccuracy have to be accepted in practice. A similar statement is also contained in BS EN 13914-2, which states that whatever the plastering system and finish and however skilled and conscientious the operative, plastering is a craft and it should be appreciated that it is not possible to achieve a completely smooth and true surface finish.

The flatness of the plastered finish will depend on the accuracy to which the background has been constructed and the thickness of the plaster specified. With subtle changes to framing materials it becomes tougher to achieve a smooth ceiling. In order to accurately define required tolerances, materials being used, their dimensional tolerances, and the level of workmanship must all be considered during planning. Other factors to be considered in determining the level of finish of the gypsum board surface is (1) the type and angle of surface illumination (both natural and artificial lighting), and (2) the paint and method of application, or the type and finish of wallcovering material, specified as the final decoration. Once all of the factors have been evaluated, specifications can be written in specific terms and responsible contractors are better prepared to present their most competitive bid.

It is essential that the designer or employer establishes a benchmark for the quality of finish which can be referred to throughout the contract. Some contract documents describing how gypsum board walls and ceilings should look prior to final decoration with paints and other wallcoverings have included nonspecific terms such as "industry standards" and "workmanlike finish." As a result the drywall and ceiling contractors have tried to fulfil their obligations by providing the finish conditions envisioned but not truly described. The tolerances must be written in specific terms in order allow the contractor to present their most accurate and competitive bid. It is essential to establish a benchmark for the quality of finish which can be referred to throughout the contract.

SABISA General Specification for Suspended Ceilings makes reference to SANS 10155-1980 – Code of Practice for Accuracy in Buildings specifies permissible deviations in elements or components. The tolerances stated in the SABISA General Specification for Suspended Ceilings are applicable to the exposed surface to be plastered and not necessarily to the final plaster finish. Where there are no specific enhanced tolerances are specified; it would be standard practice to use the tolerances stated for the drywall and ceiling specification and in BS 8212 and BS EN 13964 as the standard to be achieved for the skim finish. This would allow the finished face of a partition to be installed within a BS 8212 deviation band of $\pm 5\text{mm}$ from 2m straight edge with equal offsets.

Painting will tend to reveal any inherent surface irregularities. The painter or decorator must prepare the plastered surface by cleaning of all dirt, dust, plaster splashes and other foreign matter. Minor defects such as pinholes, paper scuffs and damage must be made good and all stopping and filling carried out. These minor imperfections will be further highlighted when gloss or semi-gloss paints are used, particularly where the plasterwork is subjected to intense or shallow lighting.

Where there is glancing illumination (critical light), additional measures will be required and this must be specified. The effect of glancing light on the appearance of flat surfaces is a well-documented phenomenon. Surface which seem perfectly flat under diffused light appears rough and uneven when lit in light falling nearly parallel to the surface. A consequence of flat deviation from the surface is that glancing light cast shadows that are irregular in distribution or shape.



Refer to SABISA Guidelines for partitions or ASTM C840 for recommended level of finish in areas subject to critical light.

Ceiling trims i.e. perimeter angles and corner beads must be properly aligned at but joints and must be covered with at least 2 coats of skim coat plaster.

Consideration must also be given to the inspection of the partition. When inspecting the quality of the finished plaster, BS EN 13914-2 advises that works must be inspected for acceptance from positions normally used in adjacent areas. This is normally from an entrance doorway and from the centre of a room in a domestic house and from about 2m away from the surface in larger areas.

Inspection of installed Partition and glass shall, amongst others, be carried out according to the following criteria:

4.1 Scratches and Blemishes

This inspection will be viewed under lighting conditions applicable to the area as laid down in SANS 10114-1 Table 8.0 Illuminance and glare index, in particular the OHS Act Safety Lux value and at a distance of 3 metres. Refer Annex 3, which represents the values, stated in abovementioned Table 8.0 of SANS 10114-1.

4.2 Aluminium & Partition Finishes

Scratches on aluminium and partition finishes are defined as being a mark on the surface which penetrates the powder coated or anodised surface, and/or Vinyl/painted partition panels thereby exposing the base material.

4.3 Glass

In laminated glass interlayer bubbles larger than 1.5mm diameter will not be allowed. Larger clusters or close spacing of smaller bubbles will also be disallowed.

If visible when viewed from a distance of three metres under normal lighting conditions scratches in glass will not be acceptable. Refer to SAGGA Guidelines.