

DRYWALL TOLERANCE ADVISORY NOTE

Drywall plasterboard systems provide both performance and background for the application of the selected decorative finishes.

Providing cost effective, lightweight solutions for partitions, linings and ceiling systems within commercial and residential projects. Plasterboard, drywall plasterboard systems versatility, speed of installation, with substantiated, defined fire, acoustic, thermal and robust solutions from our United Kingdom and Ireland manufactures.

This guidance document provides an overview of drywall systems to provide both learning and better understanding of the installation of systems & expected finish tolerance, along with the inspection process, therefore improving quality.

This document reflects BS8000-8:2023 Workmanship on construction sites – Design and installation of dry lining systems. This British Standard is the main arbiter in relation to drywall tolerances including finishes and inspection procedure. Table A outlines other relevant standards. These and manufacturers guidance should be referenced when reviewing the tolerance of drywall plasterboard systems.

Manufactures and GPDA – instructions, recommendations and guidance.

- [British Gypsum](#)
- [GPDA-Manual-Handling-Brochure](#)
- [Gyproc](#)
- [Knauf](#)
- [Siniat](#)

British standard	Description
BS EN 520:2004+A1:2009	Gypsum plasterboards
BS 8000-8:2023	Workmanship on construction sites – Design and installation of dry lining systems
BS EN 13914-2:2016	Design preparation and application of internal plastering
BS EN 13963:2014	Jointing materials for gypsum plasterboards
BS EN 13964:2014	Suspended ceilings
BS EN 13950:2014	Gypsum plasterboard thermal/ acoustic insulation composite panels
BS EN 14190:2014	Gypsum plasterboard products from reprocessing
BS EN 14195:2014	Metal framing components for gypsum plasterboard systems

Table A – Recommended Reference Standards



Materials Storage (BS8000-8:2023 Clause 6)

All materials to be stored covered, on a clean, dry and level site, on a manufacturer supplied pallet or 100mm wide bearer @ ≤ 400 mm centres. Consider the material loading multi floor structures to ensure that an excessive point or total loading is not applied. Stack pallets of materials in line with manufacturers guidance/recommendations. Rotation of materials is required to reflect the use within period on finishing products.

Working Area (BS8000-8:2023 Clause 6)

Drywall systems should only be installed in a clean dry area with sufficient lighting either natural or artificial. The area is required to be weatherproof, since water damage can impact on the system performance, along with aesthetics. Furthermore, unsuitable conditions can impact on tolerances as outlined with this document.

Material Handling (BS8000-8:2023 Clause 7 and The GPDA Manual handling guide)

The system designer provides a risk assessment, providing safe working principles for both manual and mechanical handling of all drywall systems materials.

Performance (BS8000-8:2023 Clause 7)

The designer needs to consider performance (but not limited to) – Fire, Acoustic, Robustness incl. Impact. Movement – Structural, Mechanical, Differential or Thermal (vertical and/or lateral).

Defining Tolerances (BS8000-8:2023 Clause 7 and 8)

Tolerances can be affected by several factors (but not limited to) – openings, returns, residual defections from imposed loads (fixtures & fittings and/or wind), service penetrations, timber elements (pattress etc.), opening (doors, access panels, glazed screens), internal and external corners.

The tolerance should be clearly defined within the contract documents. Where a tighter tolerance is desired, it should be clear within said documents as possible impacts of material selection, fixing to background, time & cost, installer training may occur.

Clearly materials applied to drywall systems have inherent tolerance as well, therefore consideration in areas such as joinery, shadow gaps etc. needs to be addressed.

The tolerance of the background needs to be addresses with common materials timber, Steel Framing System, Concrete, Masonry, Screed & Structural Steel. Particular attention in relation to refurbishment should be taken.

Finishes Deviation Bands (BS8000-8:2023 Clause 8)

Localised buildups of drywall systems are inevitable; Tables B and C outline the tolerances of the installed system. The installer should be aware of these and any contract specific deviation from these British Standard clauses. Care should be taken not to compound individual positive tolerances leading to excessive buildups. In addition consideration to any lateral loading defection, reduction in framing materials to accommodate services, size and frequency of service/builders work openings, timber noggings/pattress must be taken when the final measurements are assessed. When the plasterboard lining is applied to an existng or new background consideration should be given to the impact of the background on the finish.

It's advised prior to commencement of the partition, lining or ceiling that a survey of backgrounds is undertaken. Then during construction at the following progression points: framing, plasterboard application & finish.

Finished plasterboard partitions and linings	Measure without jointing and skim plaster. Over the full length of the face the maximum deviation from smallest to largest offset = 8mm vertically (1100mm above finishes floor) or horizontally. This tolerance also applies to openings (door heads, access panels & backing plates).
Surface of tape and joint finish – vertical/horizontal joints	Measured from and to plasterboard surfaces with a 450mm straight edge & 3 x 40mm metal pads to each end the 300mm wide joint to be -0/+3mm.
Surface of tape and joint finish – 90° corners	Measured with a straight edge from plasterboard face external angle -0/+4mm, internal angle -0/+3mm
The flatness/smoothness of skim plaster	Reference BS EN 13914-2:2016, Table 5.
Boxed studs	A maximum increase in the partition width is +3mm.
Thickness of partitions	Excluding any finish +/-5mm.
Ceiling, bulkheads, casings & reveals	Further reading in these areas can be accessed within BS 8000-8:2023.

Table B – Finishes Deviation Bands (BS 8000-8:2023 Clause 8)

Studs	Joint orientation	Board edge	Comment
Steel or Timber	Vertical	Bound or cut edge	Gap between plasterboards ≤3mm
		Bound edge	Fixings 10mm from edge
		Cut edge	Fixings 13mm from edge
	Horizontal	Cut edge	Gap between plasterboards ≤3mm
			Fixings 13mm from edge
General			
Screw heads flush with paper, not to penetrate the core			
Centres of fixings as per system provider			

Table C – Fixing board edges – partitions

Equipment used for the measurement of completed or partially completed assemblies should be calibrated in accordance with the specific standards for the type of measuring equipment used. The following (but not limited to) equipment should be used to provide an accurate measured spinning laser; laser plumb bob; dumpy level; theodolite; metal tape; plumb bob; water level; laser distance measure; straight edge; builder's square; metal rule; measurement gauges for internal and external corners and jointed crowns; spirit levels.



Decorative Finishes (BS8000-8:2023 Clause 8)

Prior to the application of the decorative paint finish dust should be removed and compatible primer from the system provider should be applied to the paper face and full dried and sanded jointing compound.

Decoration in accordance with BS 6150:2006+A1:2014 Painting of Buildings. Consideration of finish needs to be undertaken with consideration of the lighting scheme. Gloss or sheen paints will highlight joints, with butt joints more noticeable than tapered edge joints. Selection of a matt paint is likely to produce a consistent appearance. A higher level of lighting than that of the final design is recommended for the decoration application.

The drywall system installer to undertake a compliant quality inspection process throughout installation, with an agreed quality threshold prior to hand over for decoration.

Acceptance of drywall finish (BS8000-8:2023 Clause 8)

The finishes appearance of drywall can be greatly influenced by natural and artificial light. This can be minimised by removing light glancing or acute, either natural or artificial, along with consideration of location of joints, light source & selection of finish.

Furthermore, even if the drywall joints are within tolerance unshaded lights, fluorescent lights, LED's & up/down lights may highlight joints. Recommended lighting solutions are shaded, recessed or lower lumen, which overlap and reduce glancing light.

As discussed above the standards allow crowning at the joints, however several factors could be introduced to work with glancing & or acute lighting i.e. longer plasterboards with cross joints above ceilings, also a tighter joint specification which is clearly defined at tender stage.

Quality inspection – Viewing conditions (BS8000-8:2023 Clause 9)

Measurement of the joints to tolerance is one element of inspection along with a visual inspection. This should be undertaken from a doorway and from the centre of the room, a position two metres from the inspection surface. Carried out at eye level and a sitting position, with the use of high lumens equipment should be always avoided.

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