Plasterboard finishes under light

The finishing of plasterboard is often a point of disagreement between the subcontractor, the builder and the owner, with wall and ceiling plasterboard problems frequently identified as one of the [top ten defects](http://www.masterbuilders.asn.au/building-and-planning/industry-information/top-10-defects) within building-related disputes in Queensland.

All building contractors have an obligation under the [*Domestic Building Contracts Act 2000*](http://www.masterbuilders.asn.au/laws-codes-and-regulations/domestic-building-contracts-act) to warrant domestic building work that they perform and ensure that “all materials supplied will be good and, having regard to the relevant criteria, suitable for the purpose for which they are used”.

This requirement should not be confused with the performance and limitations of the plasterboard as specified by the manufacturer and or the specifier.

Read more about:

* [Levels of finish](http://www.masterbuilders.asn.au/building-and-planning/technical-information/plasterboard/plasterboard-finishes-under-light#levels)
* [Understanding the effects of light](http://www.masterbuilders.asn.au/building-and-planning/technical-information/plasterboard/plasterboard-finishes-under-light#effects)
* [Painting plasterboard](http://www.masterbuilders.asn.au/building-and-planning/technical-information/plasterboard/painting-plasterboard).

Levels of finish

**Level 0**

Level 0 finish may be useful in temporary construction.

**Level 1**

Level 1 finish is for use in plenum areas above ceilings and in areas where the work would generally be concealed.

**Level 2**

Level 2 finish is for use in warehouse, storage areas and the like where surface appearance is not of primary concern.

**Level 3**

Level 3 finish is for use in areas that are to receive heavy or medium texture, this level of finish is not generally suitable where smooth painted surfaces or light to medium weight wall coverings are specified.

**Level 4**

Level 4 finish is the generally accepted level of finish for domestic construction and the specification will read that all framing, plasterboard lining, jointing and finishing shall be carried out to a level 4 Finish, in accordance with [AS/NZS 2589:2007 *Gypsum linings – Application and finishing*](http://infostore.saiglobal.com/store/Details.aspx?ProductID=365919).

A level 4 finish is described in AS/NZS 2589 as:

*All joints and interior angles shall have tape embedded in jointing cement/jointing compound and a minimum of two separate coats of jointing cement/jointing compound applied over all joints, angles, fastener heads and accessories. All jointing cement/jointing compound shall be finished evenly and be free of tool marks and ridges in preparation for decoration. Flat or low sheen paints shall be used for this level.*

**Level 5**

Level 5 finish is for use where gloss or semi-gloss paints or dark colours are specified or where critical lighting conditions occur on flat, satin or low sheen paints. This finish requires tighter tolerances of substrate straightness, will take extra time and use extra coating material at extra cost to achieve an enhanced uniformity of surface finish to minimise the effects from glancing light on gloss or semi-gloss paint finishes or dark colours.

Understanding the effects of light

When specifiers, builders and home owners are considering the type of finish they require, it is important to understand how the overall appearance is likely to be affected by glancing light, and that the choices of the applied finishes and lighting design is very much a matter of cause and effect.

By understanding the role that light fittings play and the consequences of their position, it is possible to minimise adverse effects on quite normal standards of workmanship.

The most important remedy is a proactive approach to planning and communication between the contractor and the customer.

Lighting variations and conditions conclude that where possible, ceiling and wall joints should run in the direction of the light source – for example, at right angles to windows or large openings, avoiding butt joints wherever possible as finished joints are subjected to a variety of lighting conditions.

**Light intensities & glancing light**

Light intensities are constantly changing throughout the day, depending on the position of the sun, sky conditions, window, door or the location of light source, reflections from surrounding buildings, ground and water.

At night, the intensity varies again. Glancing light is the light that shines obliquely across the surface of the wall or ceiling. The worst instances of glancing light occur with single unshaded light bulbs fixed directly to the ceilings or walls, rooms with windows to ceiling level or windows adjacent to walls.

**Ceiling lighting**

A surface-mounted ceiling fitting fixed in the centre of the room provides the worst characteristic for producing the glancing light effect. A light source that is close to the ceiling surface causes the angle of incidence onto the ceiling to be very shallow and with the light source installed centrally in the room the effect will occur in all directions.

An ideal lighting technique is to use a series of fittings hung as low as possible below the ceiling. The angle of light striking the surface is as great as possible and the multiple light sources cancel out each other’s shadows.

**Wall lighting**

With artificial lighting to the walls, the same effect applies as to ceiling fittings. Wall mounted lights may well show up a ceiling in a kindly manner; however, they tend to accentuate minor imperfections in the walls that are not normally seen.

Similarly, high output light sources are more severe in their effect because they create deeper shadows, whereas the whiter the light the stronger the contrast, the greater the perceived imperfections.

**Remedial measures**

Remedial measures may be employed where the physical circumstance producing glancing light effect already exists. For example, the situation can be improved by appropriate soft furnishings and light matt finishes.

**Recessed fittings**

In general terms, recessed fittings and ceiling surfaces are compatible; however, they should be kept well away from walls and be deeply recessed, with a flush mounted diffuser with soft low wattage diffused lighting providing the best result.