

INTERIOR FINISHES INSTALLATION GUIDE



USG BORAL
INNOVATION INSPIRED BY YOU.™



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Plasterboard

Ceilings

Interior Finishes

Metal Framing

Substrates



Interior Finishes

Introduction

Boral Gypsum and USG Corporation have joined forces to become market leaders across Asia, Australasia and the Middle East, transforming the two companies into a world-leading building products business, USG Boral Building Products (USG Boral).

At USG Boral, we believe the best innovations start with a purpose – a focus on why the innovation is needed and who will benefit from it. Our focus is to deliver innovations that help you work smarter, do more and build better. Through an ever-growing portfolio of groundbreaking products backed by unparalleled service, we empower our customers to grow their business, much the same way you build cities and communities the world over. We do so by investing in purposeful innovation, expanding into different markets and constantly searching for new ways to increase performance and productivity.

This commitment to innovation and focus on you, our customer, is inspired by a desire to enable architects, contractors and workers alike to improve the way we live by changing the way buildings are designed and built.

Interior Finishing

USG Boral ME manufactures and supplies an extensive range of high-quality and consistent joint compounds including bedding and base compounds, finishing compounds, all purpose to patching and skim compounds to transform your plasterboard joints, angles and fastener heads into one seamless surface.

USG Boral recommends the use of a 3 coat joint system for all plasterboard joints with high quality paper tape such as SHEETROCK® Paper Joint Tape.



Application of joint compound over square edge joint

Jointing and Finishing

Jointing and finishing of plasterboard should be carried out according to the required level of finish (refer to Levels of Finish, page 5). If no level is specified then Level 4 is the default level of finish for domestic construction.

It requires all joints and external angles to be taped and coated as follows:

- Bed jointing tape into an initial coat of base compound
- Apply a second coat of base compound to fill and level joints
- Apply a coat of finishing compound

Internal angles are to be completed with a two-coat application. The joint compound should be finished smooth and be free of tool marks and ridges.

Extreme care must be taken in jointing and finishing where walls or ceilings are subject to critical lighting.

Levels of Finish

The term 'level of finish' applies to plasterboard linings prior to decoration.

As per ASTM C840 Application and Finishing of Gypsum Board defines three levels of finish: 3, 4 and 5. Level 4 is the default level of finish for plasterboard linings, unless specified otherwise.



Critical lighting condition calls for a higher level of finish

It is essential that the level of finish is determined at the design stage since each level has specific requirements for substrate tolerances and plasterboard installation, jointing and finishing. The desired level of finish may not be achieved unless all of these requirements are met through various stages of construction. Levels of finish recommended for various lighting conditions and surface decorations are shown in Figure 1, page 5.

A summary of various levels of finish is provided below:

Level 3

This level of finish is used in areas that do not require decoration, or where finish is not important (for example, above ceiling level or inside service shafts). All joints and interior angles must have tape embedded in the joint compound and one separate coat of joint compound applied over all joints and fastener heads. Butt joints and recessed joints in walls and ceilings can be placed on framing members.

Level 4

This is the default and generally accepted level of plasterboard finish. All joints and interior angles must have tape embedded in the jointing compound and a minimum of two separate coats of joint compound applied over all joints, angles, fastener heads and accessories. If Level 4 surface is to be exposed to critical light, it should be covered with textured finishes or wall coverings. Smooth textured finishes and flat, matt or low sheen paints can be used when Level 4 finish is illuminated by non-critical lighting. Flat paints in this situation tend to conceal joints better. Weight, texture and sheen level of wall coverings and finishes should be carefully evaluated and joints should be adequately concealed if wall-covering material is lightweight, glossy or lightly patterned.

NOTES:

- In critical lighting conditions, surface variations may still be apparent in a Level 4 surface finish
- Gloss, semi-gloss or deep tone paints are not recommended for Level 4 finish, as they accentuate surface variations, refer to Figure 1.

Level 5

Level 5 finish should be used where gloss or semi-gloss paints are specified or where lining surfaces will be exposed to critical lighting conditions. The Level 5 finish is characterized by a parity of surface texture and porosity. All joints and interior angles must have tape embedded in the jointing compound and a minimum of two separate coats of jointing compound applied over all joints, angles, fastener heads and accessories. The work is finished with proprietary surface preparations or skim coating to remove differential surface textures and porosity.

A suitable paint or plaster material is sprayed, rolled or trowelled over the defined area. The surface texture must be random and monolithic, concealing joints and fixing points.



Skim coat application

NOTES:

- If Level 5 finish is desired for a decorated plasterboard surface, this must be specified at the design stage
- Level 5 finish is difficult to achieve and always requires the cooperation of the framer, plasterer and painter in establishing suitable work practices that deliver the agreed painted finish for the given project
- Some minor surface variations may still be visible in Level 5 finish, however, these will be minimized
- The surface of the defined area may require sanding to be suitable for decoration

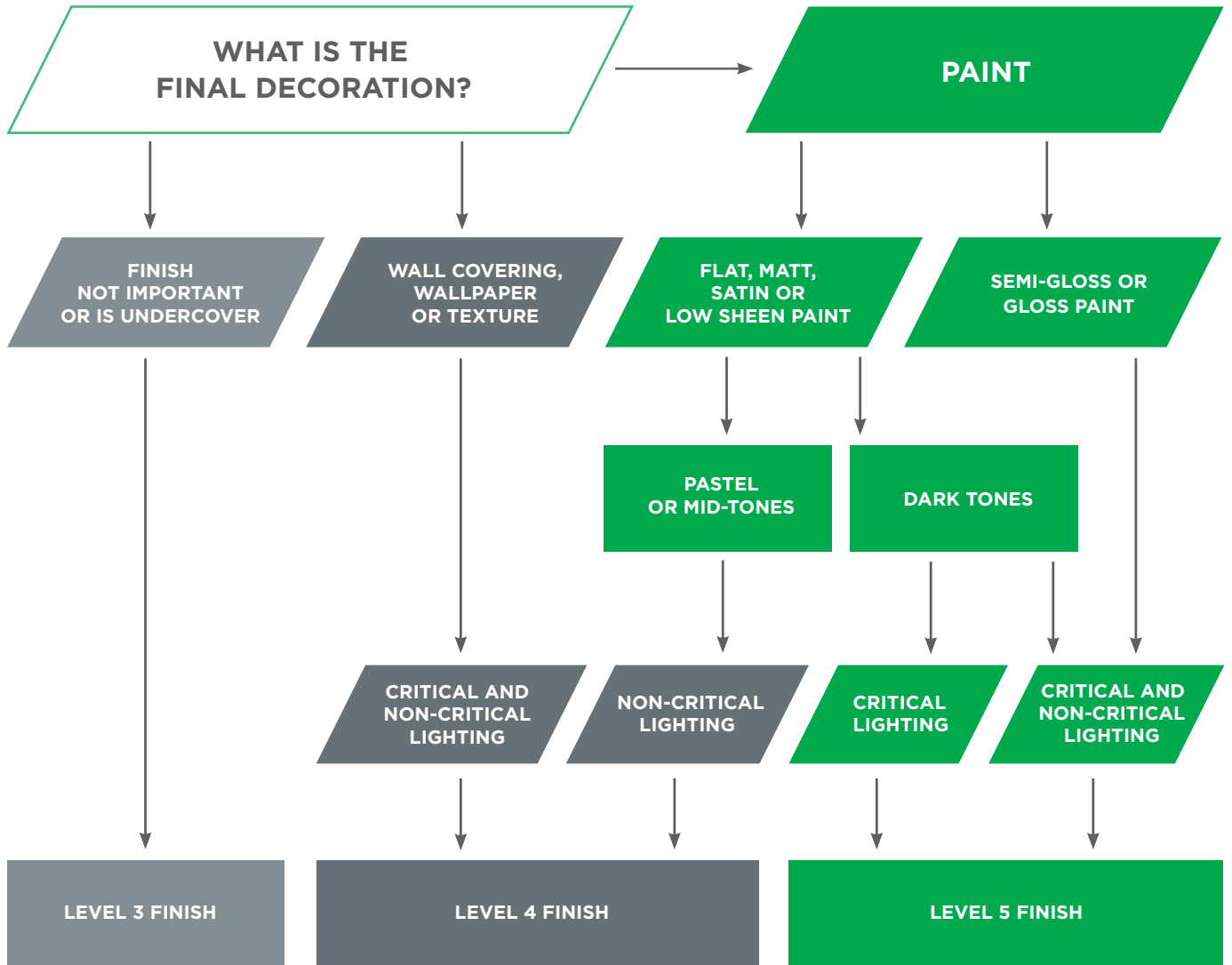


Figure 1: Levels of Finish

Jointing Compounds

Types of Jointing Compounds

Jointing compounds broadly fall into two types:

- Setting compounds
- Air-drying compounds

The jointing system may consist of one or both types of compounds and jointing tape (paper tape, mesh or fiberglass tape).

Setting Compounds

- Setting compounds are plaster based and can be used for bedding tape, base coating and finishing coats. They are applied by hand and generally provide a stronger joint than air-drying compounds. Setting time can range from 20 minutes to 120 minutes

Air-Drying Compounds

Air-drying compounds are vinyl-based premixed compounds that can be used for base coating (all-purpose compounds only) and/or top coating. The use of air-drying type compounds in hot and dry conditions reduces the risk of premature dry out associated with plaster based setting compounds. Can be applied by hand or with mechanical tools.

- Paper tape must be used when taping with air-drying compounds
- Air-drying compounds may require 24 hours drying time between coats, depending on weather conditions
- Air-drying compounds should not be applied when the interior temperature is less than 10°C
- Application of plaster based setting compounds over premixed air-drying compounds is not recommended

Storage

- Compounds should be stored in a dry location in room temperature. Compounds should be kept above ground and protected from freezing, exposure to heat, and direct sunlight
- Storage in an unsuitable environment or once container or bag is opened can shorten the lifespan of the product

Mixing – Setting Powder Compounds

For best results:

- Check the 'expiry/best before' date on packaging to ensure compounds are fit for use
- Always use clean, cold potable water and clean containers and tools for mixing. Using dirty containers, water and tools may affect the setting time and set strength
- Slowly add powder to water and allow powder to soak before mixing
- Mix only enough compound for stated working time when using setting compounds
- Mix by hand or with a power mixer (max of 400rpm – mixing at higher speeds may draw air into the mix, creating air bubbles). Mix until a smooth workable paste has been achieved. Avoid over mixing as this may accelerate setting and shorten the working life of the compound



Mix until a smooth workable paste is achieved

- For setting compounds, once setting has commenced, the material cannot be remixed and should not be agitated or retempered by the addition of water
- Inclusion of other materials in the mix could impair the performance of the compound and is not recommended

Mixing – Air-Drying Readymix Compounds

For best results:

- Ready-mix compounds may appear thick in pail. Before adding water, lightly mix and test its application; if required, add water to achieve desired consistency
- Caution: Avoid over-thinning when adding water as this may cause cracking and excessive shrinkage
- If liquid has separated from the compound, stir carefully to restore consistency
- Caution: Do not over mix; over mixing can introduce air bubbles, which can create surface imperfections

NOTES:

- Setting compounds should be used with caution in windy, dry and hot conditions as compounds may dry out before setting occurs. Faster setting compounds or air-drying compounds are recommended for such applications
- Subsequent coats of jointing compounds should not be applied 'wet on wet'. Allow each coat to dry before applying the next coat
- Overthinning of jointing compounds may cause shrinkage and hollow joints

USG Boral ME Joint Compounds

						
Specification		SHEETROCK® All Purpose Joint Compound	Premium Premix	SHEETROCK® Lightweight All Purpose Joint Compound	SHEETROCK® Brand Tuff-Hide™ Primer-Surfacer	SHEETROCK® Base Compound
JOINTING	1st Coat	•	•	•	•	•
	2nd Coat	•	•	•	•	•
	3rd Coat	•	•	•	•	•
	Finishing Coat	•	•	•	•	•
	Primer Coat	•	•	•	•	•
	Mechanical Tools	•	•	•	•	•
	Bonding Agent	•	•	•	•	•
SYSTEMS	Substrate of Application	DryWall	DryWall	DryWall	DryWall / Concrete	Concrete
	Area of Application	Interior	Interior	Interior	Interior	Interior
	Fire Rated	•	•	•	•	•
	Wet Area	•	•	•	•	•
PROPERTIES	Curing Type	Air-Drying	Air-Drying	Air-Drying	Air-Drying	Air-Drying
	Curing Time	24 Hrs	24 Hrs	24 Hrs	60-90 Minutes	2.5 Hrs
	Product Size	5KG, 15KG and 28KG (Pail)	28KG (Pail)	17L (Pail)	28KG (Pail)	28KG (Pail)
	Sanding	Easy 120 grit	Easy 180 - 220 grit	Easy 150 grit	•	Moderate 220 grit
	Compound Type	Ready Mix	Ready Mix	Ready Mix	Ready Mix	Ready Mix
	Color	off-white	off-white	off-white	White	off-white

Note 3 - Paper Tape

Paper tape must be used with Air-drying type compounds when jointing. (e.g SHEETROCK® Brand Paper Joint Tape).

USG Boral ME Joint Compounds

				
Specification		SHEETROCK® Brand All Purpose Joint Compound (Powder)	General Purpose Basecoat	DUROCK® Basecoat
JOINTING	1st Coat	•	•	•
	2nd Coat	•	•	•
	3rd Coat	•	•	•
	Finishing Coat	•	•	•
	Primer Coat	• (Texturing)	•	•
	Mechanical Tools	•	•	•
	Bonding Agent	•	•	•
SYSTEMS	Substrate of Application	DryWall	Glass-Mat / Concrete	Durock® System
	Area of Application	Interior	Interior / Exterior	Interior / Exterior
	Fire Rated	•	•	•
	Wet Area	•	•	•
PROPERTIES	Curing Type	Air-Drying	Powder / Air-Drying	Powder / Air-Drying
	Curing Time	8 Hrs	8 Hrs	8 Hrs
	Product Size	25KG (Bag)	25KG (Bag)	25KG (Bag)
	Sanding	Easy 120 grit	Wet Sponge	Wet Sponge
	Compound Type	Powder	Cementite Powder	Cementite Powder
	Color	Off-white	Grey / White	Grey / White

Jointing Tapes

Jointing tapes are used to provide reinforcement to plasterboard joints and angles.

USG Boral Sheetrock paper tape is a high strength special cross-fiber paper tape possessing exceptional wet strength and resisting stretching, wrinkling and tearing.

A wafer thin paper aids smooth finishing and the roughened surface produces a superior bond to jointing compounds. Centre creased for application to angles.

Paper tape is recommended by USG Boral for jointing of gypsum wall and ceiling linings due to its high strength and suitability for all jointing compounds and applications.

Paper jointing tape must be used with air-drying type jointing compounds.

USG Boral jointing tape is available in 75m and 150m x 50mm wide rolls.

NOTE:

As the two sides of paper tape are not identical, the outside of the roll should always be applied to the wet compound to ensure the best adhesion.



Paper tape



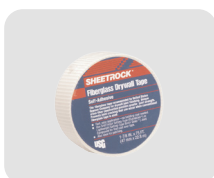
Fiberglass Tape

Application Tools and Accessories

Plastering tools and accessories required for jointing and finishing plasterboard systems:



Paper or Mesh Joint Tape



Fiberglass Tape



6" (150mm) Joint knife



8" (200mm) Joint knife Snip



10" (250mm) Joint knife or Trowel



Large mixing bucket



Electric drill mixer



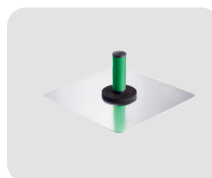
Sander



Measuring Tape



Snip or Shear



Hawk



Staple gun



External angle-Metal or plastic bead or Flex metal tape



Corner Tool 6"



Corner Tool 8"



Taping tool-Mechanical application

Stainless steel jointing tools are recommended for the best possible finish and service longevity. Tools should be cleaned in water before compounds have fully set and stainless steel tools given a light rub with an oiled cloth to prevent rusting.

Plasterers trestles or scaffolding should be used to ensure correct working height.

Jointing and Finishing Recessed or Tapered Edge Joints

Recessed joints should be stopped and finished with a straight or curved trowel to leave a slightly convex camber over the joint.

First Coat

- Fill any gaps in joints with base compound prior to the taping process
- Fill recessed joint with a layer of base compound using a flexible 150mm broad knife
- Centre and press the paper tape into the base compound using a 150mm broad knife, drawing along the joint with sufficient pressure to remove excess compound
- Ensure all air bubbles have been expelled, taking care sufficient compound is left under the tape to provide a strong bond
- After embedding tape, apply a skim coat of compound to fill the recess
- Spot fastener heads

Second Coat

- Allow sufficient time for the first coat of base compound to set
- Apply a second coat of base compound approximately 200mm wide, using a trowel or broad-knife
- Feather joint edges
- Spot fastener heads again, extending beyond the first coat by approximately 25mm

Finishing Coat

- Ensure base coats are set and scrape to remove any rough spots or lumps
- Using a trowel, apply a coat of finishing compound approximately 250mm wide, feathering out approximately 25mm beyond edges of the basecoat
- Use a curved trowel on the finishing coat to produce a slight convex curve. Feather out the edges
- Allow a minimum of 24 hours to dry (longer in cold, wet weather conditions)
- When dry, lightly sand to a smooth finish with sanding mesh or 150-220 grit paper, depending on sanding hardness of finishing compound used

Application Steps



Step 1
First coat - Bedding compound



Step 2
First coat - Bed tape



Step 3
First coat - Skim coat over tape



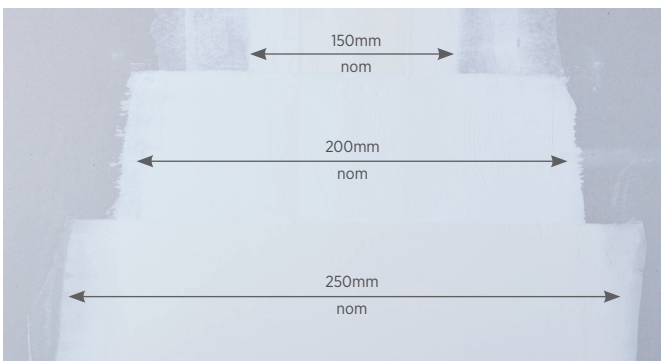
Step 4
Second coat



Step 5
Finishing coat



Step 6
Dry sanding



Step 7
Total tapered edge joint system

Jointing and Finishing Butt or Square Edge Joints

Butt or end joints should be flush-jointed and finished with a three coat system as for recessed joints.

For a flatter finish, and to minimize surface build-up of compound, widen each jointing coat so that the final coat of the finished joint is about 500mm wide.

First Coat

- Fill in any gaps in joints with base compound prior to the taping process
- Using a trowel, apply a thin layer of base compound to each side of the joint (approximately 300mm total width) prefilling any recess gaps at the joints
- Centre and press the paper tape into the base compound using a 150mm broad-knife, drawing along the joint with sufficient pressure to remove excess compound
- Ensure all air bubbles have been expelled, taking care sufficient compound is left under the tape to provide a strong bond
- After embedding tape apply a skim coat of compound over the paper tape

Second Coat

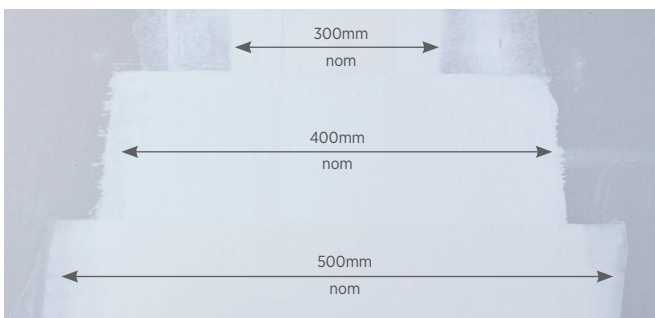
- Allow sufficient time for the first coat of base compound to set before applying a second coat
- Apply a second coat of compound to each side of the joint (approximately 400mm total width)
- Feather out joint edges
- The second coat should have a gradual convex curve

Finishing Coat

- Ensure base coats are set and remove any rough spots or lumps
- Using a straight bladed trowel, apply a coat of finishing compound to each side of the joint (approximately 500mm total width). Feather out the edges
- The finished coat should have a slight convex curve
- Allow a minimum of 24 hours to dry (longer in cold, wet weather conditions)
- When thoroughly dry, lightly sand to a smooth finish with sanding mesh or 150–220 grit sand paper, depending on sanding hardness of finishing compound used



Step 1
Finishing coat for square edge joints



Step 2
Total square edge joint system



Step 3
Dry sanding of square edge joints

Jointing and Finishing Corners

Internal Corners or Angles

Internal corners should be jointed with a two coat system using paper tape. Gaps in excess of 4mm should be pre-filled with compound.

Installation:

- Apply compound to both sides of internal corner using a 75mm broad knife
- Measure and cut reinforcing tape, fold along centerline and bed into corner, using broad knife
- Apply a skim coat of compound over tape
- When dry apply a second coat of compound with the broad knife, then finish by feathering beyond edges of first coat
- Allow a minimum of 24 hours to dry (longer in cold, wet weather conditions)
- When thoroughly dry, lightly sand to a smooth finish with sanding mesh or 150-220 grit paper, depending on the sanding hardness of the compound used



Step 1
First coat - Apply base compound



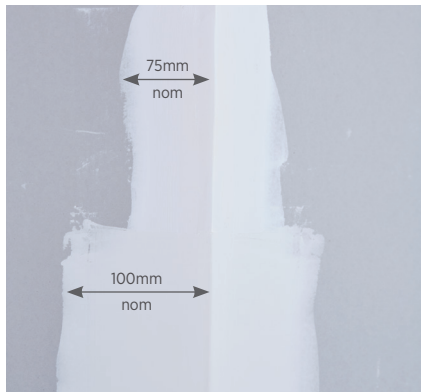
Step 2
First coat - Fold and bed tape



Step 3
First coat - Skim coat over tape



Step 4
Apply second coat



Step 5
Internal corner jointing system

External Corners or Angles

External corners should be strengthened with perforated metal angles then jointed and finished with a three coat system. Suitable metal angles include Rondo Corner Beads P01 or P32.

Installation:

- Cut metal angle to length and position so that the angle is both straight and in line with the wall surfaces. Ensure that there is a 10mm gap left at the concrete floor to avoid rust
- Fix with nails or staples at maximum 300mm centers along each face with nails opposite each other
- Stop and finish with a three coat system as per jointing specification
- Ensure that the first coat of compound covers approximately 150mm of angle faces and is forced through the perforations
- The second coat should extend approximately 200mm from the corner
- The final coat should extend approximately 280mm from the corner with the edges feathered out
- Ensure that the final coat is built up to the corner
- Allow a minimum of 24 hours to dry (longer in cold, wet weather conditions)
- When finishing compound is thoroughly dry, light sand to a smooth finish with sanding mesh or 150–220 grit paper, depending on the sanding hardness of finishing compound used

Other beads and angles (Shadowline, Stopping Angle etc) should be finished in the same manner.



Step 1 - Perforated metal angle
Cut angle and fix to sides of corner @ 300mm ctrs



Step 1 - Alternative
Plastic corner bead



Step 1 - Alternative
Flex metal tape



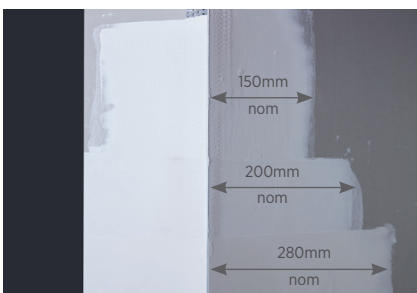
Step 2
Apply first coat to both corner faces



Step 3
Apply second coat to corner faces



Step 4
Apply third coat to corner faces



Step 5
External corner jointing system

Finishing of Screw, Fasteners or Nails Fixing

A minimum of 2 separate coats of joint compounds must be applied over screw and nails fixing. Ensure proper fixing of screws, fasteners or nails into the plasterboard. Correct any poor fixing before finishing.



Poor fixing of screw into plasterboard

- Overdriven into board and breaking the face paper (as shown)
- Where screw head still sit above board face paper



Good fixing of screw or fastener into plasterboard

- Screw driven into board but not breaking the face paper (as shown)

Installation:

- 3 coats of joint compound is recommended.
- Ensure each coat has dried before applying the next coat.
- When finishing compound is thoroughly dry, light sand to a smooth finish with 150–220 grit sand paper



Applying 3 separate coats of joint compound over screw fixings



Finished screw fixings after sanding

Mechanical Jointing Tools

The following recommendations apply to mechanical jointing tools in addition to the general Jointing and Finishing specification.

Taping machine (mud machine)

Ready-mix (air-drying) joint compounds are recommended for use in taping machine application such as USG Boral:

- SHEETROCK All Purpose Joint Compound
- MaxiSkim88

First Coat

- Load the paper tape and compound into the taping machine in accordance with manufacturer's instructions
- Adjust the taping machine to achieve minimum 1mm compound thickness under the tape
- Apply the tape and compound in accordance with manufacturer's instructions
- Immediately fill tapered joint with compound using 150mm broad-knife. Ensure full width of tapered edge joint is filled. For square edge joints ensure a skim coat is applied over the tape.

Second Coat

- For second and finishing coats, follow as per tapered or square edge jointing and finishing application using broad-knife.



Step 1
Load paper tape and pour compound into the box



Step 2
Adjust the nozzle to ensure at least 1mm of compound is in under the tape



Step 3
First coat - Apply the tape and compounds along the joint



Step 4
First coat - Skim coat over tape



Step 5
For second and finishing coats apply as per tapered or square edge joint and finishing application

PRODUCT INFORMATION

See USGBoral.com for the most up-to-date product information.

NOTE

Products described here may not be available in all geographic markets. Consult your USG Boral ME sales office or representative for information.

This Technical Information Guide is intended to provide general information and should not be used as a substitute for professional advice. There are many variables that can influence construction projects which affect whether a construction technique is appropriate. Before proceeding with any project we recommend you obtain professional advice to ascertain the appropriate construction techniques to suit the particular circumstances of your project having regard to the contents of this Installation Manual. We recommend you use qualified tradespersons to install this system.

The technical information contained in this manual was correct at the time of printing. Building systems, details and product availability are, however, subject to change. To ensure the information you are using is current, USG Boral ME recommends you review the latest building information available on the USG Boral ME website.

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