

Joining



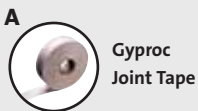
! This section includes updated information, added since it was first published in July 2009. Please see the WHITE BOOK update document for details.
Last updated 05/07/2010



Cadbury offices,
Bournville, Birmingham

Jointing

Gyproc jointing materials produce durable joint reinforcement and a smooth, continuous, crack-resistant surface ready for priming and final decoration. They also seal the lining, a prerequisite if the building element is to achieve specified levels of fire resistance and sound insulation. The materials can be applied either manually using hand tools, or mechanically, using SpeedTape tools. A number of jointing specifications are available to suit the board type, method of application, and site preference. The jointing process normally involves three application stages; bedding the tape and bulk filling the joint, secondary filling to take up shrinkage, and finishing. After drying, the complete surface is treated with Gyproc Drywall Primer or Gyproc Drywall Sealer.



Key facts

- Produces a seamless surface ready for decoration
- Choice of jointing materials to suit user preference
- Mechanically applied materials ideal for larger areas
- Ready-mixed or dry powder options
- ConstructionSkills grant approved training available

Applications

Due to the design flexibility of British Gypsum systems, they can be tailored to meet the requirements of a wide range of applications.

Sector

- | | | |
|-----------------------------|--------------|-----------------------|
| ✓ Office / commercial | ✓ Retail | ✓ Sport and leisure |
| ✓ Education | ✓ Healthcare | ✓ Industrial |
| ✓ Custodial | ✓ Housing | ✓ Apartment buildings |
| ✓ High-rise multi-occupancy | ✓ Auditoria | |

System components

Fixing and finishing products



Gyproc Joint Filler

Gypsum-based setting material for bulk and secondary filling of plasterboard joints, and fixing of external corner reinforcements.



Gyproc Joint Cement

Air-drying powdered jointing material for both hand and mechanical jointing applications.



Gyproc Easi-Fill

Combined setting and air-drying gypsum-based material for both bulk filling and finishing of joints.



Gyproc Easi-Fill 45

Gypsum-based material for both bulk filling and finishing of joints - 45 minutes working time.



Gyproc ProMix ure

Lightweight ready-mixed jointing material for both hand and mechanical jointing applications.



Gyproc Ready Mix Joint Cement

Air-drying ready-mixed jointing material for both hand and mechanical jointing applications.

▶ Refer to Table 2 for guidance on Gyproc jointing compounds.



Gyproc Joint Tape

Paper tape for flat and internal angle joints. Incorporates a centre crease, chamfered edges and spark perforations. 150m roll



Gyproc Corner Tape

Paper tape with two metal strips, for reinforcing external angle joints. 33m roll



Thistle tapes

ProTape FT50 and FT100, for reinforcing plasterboard joints and angles.



Gyproc No-Coat Ultraflex 325

Impact-resistant joint reinforcement, with a hinged co-polymer core to fit any internal or external angle joint. 30m roll



Gyproc No-Coat Ultratrim L

Impact-resistant reinforcement for neat finishing of board edges. 3050mm lengths

Fixing and finishing products (continued)



Gyproc Drywall Metal Angle Bead

Perforated galvanised angle bead for reinforcing external 90° angles. 2400 and 3000mm lengths



Gyproc Drywall Archbead

Extruded uPVC profile, for reinforcing curved arches and reveals. 3000mm lengths



Gyproc Drywall Metal Edge Bead

Galvanised steel channel for reinforcing board edges. 12.5mm width – 2400 and 3000mm lengths
15mm width – 3000mm lengths



Gyproc Drywall Plastic Edge Bead

Extruded uPVC channel for reinforcing board edges. 12.5mm width – 3000mm lengths



Gyproc Drywall Primer

Plasterboard primer, to prepare surface for painting.



Gyproc Drywall Sealer

Plasterboard sealer, used in two coats to provide vapour control, or in one coat to protect the board from steam-stripping of wallcoverings.

▶ Refer to Table 1 for guidance on Gyproc primers.

Gyproc Tools

Hand tools and SpeedTape mechanical jointing tools and equipment. For further information refer to www.artextltd.com

For further details on system components:

- ▶ Refer to section 14 - Products, Plasterboard accessories.
- ▶ Refer to section 14 - Products, Decorative products.



Installation overview



Preparation - general

Board finishing should be completed as soon as possible after the boards have been fixed. Board surfaces should be reasonably dry, clean and protected from the weather. Boards should be securely fixed with no steps between adjacent boards. The correct fixings must be used and properly located with their heads just below the liner surface. Any protruding screw heads should be driven home with a hand screwdriver prior to jointing. Gaps between boards greater than 3mm should be pre-filled using Gyproc Joint Filler, Gyproc Easi-Fill or Gyproc Easi-Fill 45.

Hand jointing - Gyproc plasterboards

Gyproc Joint Tape is bedded into the appropriate Gyproc jointing compound. See Table 3.

If Thistle ProTape FT50 is used, bedding is not required, but the filling material should be pressed through the holes in the tape, particularly if there is a gap between board joints. This is important to achieve a satisfactory appearance to the finished joint.

Two or three applications of jointing compound are trowel applied, each feathered out beyond the previous application. An equal number of applications are made to spot screw heads. The joint treatment is sanded as necessary to achieve a smooth surface. At internal angles, Gyproc Joint Tape is creased to the angle to provide reinforcement and bedded using a Gyproc Taping Knife. At external angles, Gyproc Corner Tape is used. Where additional protection is required, Gyproc Drywall Metal Angle Bead or Gyproc No-Coat Ultraflex 325 is applied. Gyproc Drywall Edge Bead or Gyproc No-Coat Ultratrim L is used to protect cut ends of boards, e.g. at reveals. Corner and edge reinforcements should be fixed using a setting jointing compound. See Table 3. After drying, Gyproc Drywall Primer or Gyproc Drywall Sealer is applied to the entire board surface and jointed areas, to prepare the lining for final decorative treatment.

Mechanical jointing - Gyproc plasterboards

SpeedTape mechanical jointing tools can be used as an alternative to hand jointing, to provide a fast, consistent finish using 175mm, 250mm and 300mm finishing boxes as appropriate. A full range of tools and ConstructionSkills grant approved training is available from British Gypsum. For more information, visit www.british-gypsum.com

Jointing - Glasroc F MULTIBOARD and Glasroc F FIRECASE

Gyproc Joint Cement is trowel applied to the joint and Gyproc Joint Tape bedded in. Alternatively, Thistle ProTape FT50 is applied over the joint and a coat of Gyproc Joint Cement is trowel applied. The joint treatment is allowed to dry and lightly sanded to remove any high spots.

For internal angles the use of Gyproc Joint Tape is preferable to Thistle ProTape FT50. Its crease makes a neat, straight joint easier to achieve and the cracking resistance is higher. For external angles, Gyproc Corner Tape, Gyproc No-Coat Ultraflex 325 or Gyproc Drywall Metal Angle Bead are used, bedded in Gyproc Joint Cement. For board thicknesses of over 20mm, Gyproc No-Coat Ultraflex 325 is recommended. A second coat of Gyproc Joint Cement is trowel applied and feathered out to about 200mm width on each side on the joint. The joint treatment is allowed to dry and lightly sanded. A third application of Gyproc Joint Cement may be necessary, applied as the second but slightly wider, e.g. where boards are fixed with any steps, gaps or minor damage. When the final application has dried and been sanded smooth, the surface is ready for decoration.

Jointing and finishing is not a requirement to meet the fire protection levels for the FireCase system.

► Refer to section 9 - FireCase for guidance.

Jointing - Rigidur H

When jointing Rigidur H by hand, use Gyproc Easi-Fill or Gyproc Easi-Fill 45. The joints can be finished using the 250mm and 300mm SpeedTape finishing boxes (quick release versions) if desired. When jointing using the SpeedTape Automatic Taper, use Gyproc ProMix μE for the best results. Gyproc Joint Cement can be considered, but care needs to be taken to mix to the correct consistency.

Due to the nature of the joints on tapered edge Rigidur H, the Gyproc Joint Tape will need to be bedded down with a 50mm wide taping knife to flatten the tape back onto the joint. Take care to leave sufficient jointing material behind the tape to ensure good adhesion. The joints can then be finished using the 250mm and 300mm SpeedTape finishing boxes (quick release versions).

Jointing - Gyptone boards

Gyproc Joint Tape is bedded in Gyproc Easi-Fill to all four tapered edges and bulk-filled. When set, a finish coat of Gyproc Joint Cement is applied to all joints by hand or using a SpeedTape 175mm finishing box.

Care must be taken not to fill the perforations in the board and thereby impair the sound absorption performance.

The joint treatment is lightly sanded and dusted off. Gyproc Drywall Primer is applied by roller to the entire surface ready for decoration.

Jointing - Rigitone boards

Mix the Rigitone Vario 60 jointing material with clean water (approximately 3 parts water to 1 part filler) and fill a Rigitone Installation Kit with the mixture. Apply the filler to the joints ensuring the joints are completely full, including nominal 5mm-10mm gaps around the perimeter. Failure to fully fill the joint can cause the joint to crack.

The filler should be left to dry for a minimum of 50 minutes before striking the excess material away from the joint. Allow all the joints to dry for a minimum of 24 hours before finishing. Mask the perforations either side of the joints using wet paper tape. Fill the joints and screw heads using Gyproc Easi-Fill, let the material project slightly from the boards to allow for shrinkage and sanding.

To finish a joint where the room layout or design detail has required a Rigitone board to be cut, fill all holes falling on the joint using Rigitone Vario 60 and finish with a layer of Gyproc Easi-Fill or Gyproc Easi-Fill 45.

Once a joint has been filled, remove the masking paper tape immediately. Lightly sand once dry. Remove dust from the board surface and roller apply Gyproc Drywall Primer to the entire surface ready for decoration.

When roller applying Gyproc Drywall Primer and paint finishes, care should be taken to ensure primer or paint does not fill the perforations in the board, as this will impair acoustic performance.

Repairs to plasterboard

▶ Refer to the current British Gypsum **SITE BOOK**, available to download from www.british-gypsum.com

Cleaning equipment

All equipment should be thoroughly cleaned after use. Small residual amounts of set or part-set material will accelerate the set of freshly mixed setting jointing compounds, and residues of compounds left in a wet state will be subject to microbial attack.

Specialist training

The British Gypsum Drywall Academy offers comprehensive ConstructionSkills grant approved off-site training at dedicated training centres throughout the UK. For more information, visit www.british-gypsum.com

Decoration**Painting**

After the jointing treatment has set and dried, and any final sanding is complete, the surface should be dusted down and Gyproc Drywall Primer applied by brush, roller or, except for Gyptone or Rigitone perforated boards, suitable spray equipment. The primer evens out differences in surface texture and absorption between the board and jointed areas, to create the ideal surface to receive final decoration. Its early application helps to prevent plasterboards from yellowing. Where vapour control is a requirement the surface should be given two coats of Gyproc Drywall Sealer. Most paints and papers can be applied after Gyproc Drywall Primer or Gyproc Drywall Sealer has dried.

Gyproc Drywall Sealer should not be applied to Glasroc F MULTIBOARD, Glasroc F FIRECASE or Rigidur H.

Wallcoverings

If Gyproc Drywall Sealer is applied in a single coat, steam-stripping at a later date becomes a simple operation. Decoration should follow with the minimum of delay. Most paints and papers can be applied after Gyproc Drywall Primer or Gyproc Drywall Sealer has dried.

Vinyl or other low-permeability wall coverings restrict drying of water-based adhesives. This combination should, therefore, not be applied direct to plasterboard treated with Gyproc Drywall Sealer. The use of specialist adhesives, for example with cloth backed or solid vinyl wall covering, may result in damage to the plasterboard surface during subsequent stripping. If the use of such adhesives is necessary, consideration should be given to cross-lining with lining paper before applying the wall covering.

As with all wall and ceiling areas, high sheen gloss finishes will highlight variations of the surface, particularly with shallow angle lighting. The use of low sheen or matt finishes minimises this risk.

For the correct specification in respect of any applied decorative material, reference should be made to the manufacturer of that material.

For full installation details, refer to the British Gypsum **SITE BOOK**, available to download from www.british-gypsum.com

Performance

Air-drying and setting type compounds

Setting-only compounds - e.g. Gyproc Joint Filler

Jointing compounds used for the joint filling stage(s) are usually setting products. Hardening is not dependent upon atmospheric humidity. Fillers that only harden by setting are hand applied and have low shrinkage. When a setting-only product is applied as a thin layer it may 'dry-out' before it has properly hardened. Setting-only materials are therefore unsuitable for the finishing application, but are particularly suitable for bead fixing.

A setting material should never be applied on top of an air-drying material. Air-drying materials shrink as they dry, which may cause a joint to delaminate under such circumstances.

Air-drying compounds - e.g. Gyproc joint cements

Jointing compounds used for the finishing application are applied more thinly than bulk-fillers and so must have air-drying characteristics in order to harden sufficiently at feathered edges. Air-drying materials can be applied by hand or machine using SpeedTape tools. Air-drying materials may also be used as fillers, but greater time needs to be allowed to permit the material to dry in depth, particularly in cold or humid conditions.

Gyproc Easi-Fill and Gyproc Easi-Fill 45

These products combine the characteristics of both an air-drying and a setting material. Gyproc Easi-Fill can be applied by hand or machine using SpeedTape quick release easy clean finishing boxes. Gyproc Easi-Fill 45 should only be applied by hand. Gyproc Easi-Fill products have shrinkage that is lower than conventional joint fillers and considerably lower than air-drying joint cements, meaning they can also be used with absolute confidence in a two stage application.

Hand versus mechanical application

Hand application provides a versatile option ideal for smaller areas or where the jointing programme cannot be completed in a single operation. Mechanical jointing using SpeedTape mechanical jointing tools provides consistent high speed jointing, which is cost effective where large runs of lining are involved.

SpeedTape tools are available in full or part sets. The full set, for use with an air-drying product, includes tools that automatically bed tape and apply jointing compound at the same time.

Part sets include easy clean finishing boxes that can be used with Gyproc Easi-Fill:

- Ideal for moderate to large areas of drylining.
- Ideal where a number of areas can be finished in sequence.
- Increased productivity.
- Consistent high standards of finish.
- Easy to use.
- Professional training in their use on site is available from the British Gypsum Drywall Academy. For more information, visit www.british-gypsum.com

Coverage

Coverage depends on the grade of jointing compound chosen.

- ▶ Refer to Table 3 for guidance.



Table 1 – Coverage data

Gyproc Drywall Primer and Gyproc Drywall Sealer		
Product	Pack size	Typical coverage
Gyproc Drywall Primer	10 litre tubs	150m ² /10 litre tub (1 coat)
Gyproc Drywall Sealer	10 litre tubs	70m ² /10 litre tub (2 coats)
		150m ² /10 litre tub (1 coat)



Table 2 – Product options

Product	Hardening characteristics	Fill stage(s)	Finish stage(s)	Working time minutes	Setting time minutes
Gyproc Joint Filler	Setting	Preferred	Unsuitable	60	120
Gyproc Joint Cement	Air-drying	Can be used	Preferred	-	-
Gyproc Ready Mix Joint Cement	Air-drying	Can be used	Preferred	-	-
Gyproc ProMix LITE	Air-drying	Can be used	Preferred	-	-
Gyproc Easi-Fill	Setting / air-drying	Preferred	Preferred	60	140
Gyproc Easi-Fill 45	Setting / air-drying	Preferred	Preferred	45	70

Design

Preparation - key stages

1. Boards should be securely fixed, with no steps between adjacent boards.
2. The correct fixings must be used and properly located with their heads just below the liner surface. Any protruding screw heads should be driven home using a hand screwdriver, prior to spotting and jointing.
3. Gaps between boards greater than 3mm should be pre-filled, prior to taping with Gyproc Joint Tape.
4. Jointing materials should not be applied to frozen surfaces and should not be used at, or subjected to, the minimum temperature specified on product packaging during setting or hardening.

Joint reinforcement

In a plasterboard system, suitable joint reinforcement is essential to minimise the risk of cracking along the joints, which could then appear through the decoration.

To achieve the objective of a smooth, continuous, crack-free surface, tapered edge plasterboard and Gyproc Joint Tape are widely regarded as best practice when jointing or plastering. The tapered edges provide a recess for the joint treatment, allowing a flat, finished surface. At board joints, where cut edges or square edge boards occur, the joint treatment is inevitably raised above the board surface and is more difficult to conceal. In this situation the secondary filling stage is omitted, and joint treatment is feathered-out into the field of the board to conceal the joint as much as possible.

Joint treatment has two essential components; the reinforcement and the jointing compound. Reinforcement is necessary where there is relative movement of adjacent boards. In practice, some movement is normal and Gyproc Joint Tape is recommended for the best crack resistance. Thistle ProTape FT50 or FT100 are an alternative, and can be easy and quick to install on flat joints. Thistle ProTape FT50 or FT100, however, are not a direct substitute for Gyproc Joint Tape, as tests have shown that Gyproc Joint Tape provides superior resistance to cracking.

Table 3 – Combinations and coverage data (kg / 100 linear metres)

Jointing system	Reinforcement	Taping coat	1st finish coat	2nd finish coat	3rd finish coat
Flat joint (tapered edge - hand applied)	Paper tape / fibre tape	12	6	6	-
		12	6	6	-
		12	6	6	-
		9	5	-	-
Flat joint (tapered edge - mechanical)	Paper tape	6	6	6	3
Flat joint (square edge)	Paper tape / fibre tape	3	12	-	-
External angle	Corner tape or Gyproc No-Coat Ultraflex 325	22	9	9	-
		22	9	9	-
		18	9	-	-
	Metal bead	34	9	9	-
		34	9	9	-
		28	12	-	-
Internal angle	Paper tape	12	8	8	-
		12	8	8	-
		12	8	8	-
		10	5	-	-

KEY

Gyproc Joint Filler

Gyproc Joint Cement

Gyproc Easi-Fill / Easi-Fill 45

- These quantities should be used as a guide only - quantities used will vary depending on tools used and accuracy of board alignment.
- Material used for pre-filling gaps, repairing damage, etc is not included.
- When using a ready mix joint cement in place of powder, assume that 1 litre is equivalent to 0.85kg of powder joint cement.
- An allowance for waste and material sanded away should be added as appropriate.
- External angle reinforcements should be fixed using a setting product - Gyproc Joint Filler or Gyproc Easi-Fill / Gyproc Easi-Fill 45, except Glasroc F MULTIBOARD and Glasroc F FIRECASE.

▶ Please refer to section 3 - Basic principles of system design for general guidance

