Plaster systems

Gyproc plasters have been formulated to suit a wide variety of background types including concrete, brick, blockwork, sand / cement, Gyproc Plasterboards and expanded metal lath. They offer good impact resistance and can satisfy most hardness requirements.
Technical support: T 01 629 8400 E technical.enquiries@gypsum.ie

Plaster systems

Key facts

- Free from inherent shrinkage cracking once set
- Consistency & quality assurance
- Grades to suit most internal solid backgrounds
- Proven products
- Lightweight
- No scud coat required when applying Gyproc undercoats to blockwork

1 Undercoat plaster
2 Finish plaster

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<table>
<thead>
<tr>
<th>Components</th>
<th>Nominal bag weight (kg)</th>
<th>Shelf life (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gyproc Basecoat plasters</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gyproc Bonding</strong></td>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>An undercoat plaster for low suction backgrounds (e.g. suitably pretreated concrete), expanded metal lath, also suitable for application to the grey paper side of Gyproc Wallboards, 4x2's and Gyproc Plank.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gyproc Base Coat</strong></td>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>An undercoat plaster with high impact resistance for concrete blockwork backgrounds. Suitable for skimming same day.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gyproc Floating Coat</strong></td>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>An undercoat plaster with high coverage and good impact resistance for masonry backgrounds.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Thistle X-Ray</strong></td>
<td>25</td>
<td>16</td>
</tr>
<tr>
<td>An undercoat plaster giving protection from x-rays in medical and dental installations. Suitable for application over approved riblath metal masonry backgrounds.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2 If stored correctly.

**Gyproc Skimcoat**
A versatile final coat plaster. For finishing Gyproc Plasterboards, Gyproc undercoat plasters and sand and cement backgrounds. Pre-treatment with Thistle Bond-it is required for Gyproc Moisture Resistant Boards and 6mm Gyproc Multiboard.

**Gyproc Carlite Finish**
Suitable for use on most backgrounds. For finishing Gyproc Plasterboards, Gyproc undercoat plasters and sand and cement backgrounds. Pre-treatment with Thistle Bond-it is required for Gyproc Moisture Resistant Boards and 6mm Gyproc Multiboard.

**Gyproc Board Finish**
A final coat plaster for Gyproc Plasterboards. Pre-treatment with Thistle Bond-it is required for Gyproc Moisture Resistant Boards and 6mm Gyproc Multiboard.
Thistle plaster accessories

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ThistleBond-it</td>
<td>For pre-treatment of smooth backgrounds and Gyproc Moisture Resistant Boards and 6mm Gyproc Multiboard prior to plastering. Tub contents: 10 litre</td>
</tr>
<tr>
<td>Gyproc Plaster Angle Bead</td>
<td>A galvanised steel bead with expanded wings for reinforcing external angles in solid plasterwork.</td>
</tr>
<tr>
<td>Gyproc Plaster Stop Bead</td>
<td>A galvanised steel bead with expanded wing for finishing and reinforcing plaster edges.</td>
</tr>
<tr>
<td>Gyproc Thin Coat Angle Bead</td>
<td>A galvanised steel ‘thin-coat’ bead with perforated wings for reinforcing external angles in plaster skim applications.</td>
</tr>
<tr>
<td>Gyproc Thin Coat Mini Mesh Bead</td>
<td>A galvanised steel bead with mesh wing which provides an excellent key for thin-coat plaster corners.</td>
</tr>
<tr>
<td>Gyproc Thin-Coat Plaster Stop Bead</td>
<td>A galvanised steel bead with a perforated wing for finishing and reinforcing edges of thin-coat plaster.</td>
</tr>
<tr>
<td>Gyproc Plaster tools</td>
<td>A complete range of plastering tools and equipment.</td>
</tr>
</tbody>
</table>

Shelf life (months):

- ThistleBond-it: 6
- All other items: 1

If stored correctly.
Table 1 – plaster specifications

<table>
<thead>
<tr>
<th>Background</th>
<th>Grade of basecoat</th>
<th>Approx. set-time</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete blockwork</td>
<td>Gyproc Floating Coat or Gyproc Base Coat</td>
<td>3/5 hours</td>
<td>Ruled to an even surface and properly scratched to form a key for the finish plaster</td>
</tr>
<tr>
<td>Concrete surfaces, (suitably treated) or Dense Concrete Blocks</td>
<td>Gyproc Bonding</td>
<td>3/4 hours</td>
<td>Bonding coat applied with firm pressure, built out to required thickness ruled to an even surface and properly scratched to form a key for the finish plaster</td>
</tr>
<tr>
<td>Mortar (Sand/Cement, Sand/Cement/Lime)</td>
<td></td>
<td></td>
<td>Matured mortar background, properly</td>
</tr>
</tbody>
</table>

*Gypsum plaster should not be specified as a finish to Moisture Resistant Boards as the board is designed to be suitable for environments and filling is the recommended approach. However if a plaster finish is required, the board should first be treated with ThistleBond-it.
<table>
<thead>
<tr>
<th>Grade of finish</th>
<th>Approx. set time</th>
<th>Thickness of finish/coverage per tonne</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlite Finish or Gyproc Skimcoat</td>
<td>2/3 hours</td>
<td>375m² at 2mm thickness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carlite Finish or Gyproc Skimcoat</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carlite Finish or Gyproc Skimcoat</td>
<td>2/3 hours</td>
<td>375m² at 2mm thickness</td>
</tr>
</tbody>
</table>

of higher than normal humidity, which no Gypsum plaster is designed to be suitable for. On exposed, untiled, Moisture Resistant Boards, taping 6mm Gyproc Multiboards should also first be treated with ThistleBond-it.

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<table>
<thead>
<tr>
<th>Background</th>
<th>Grade of basecoat</th>
<th>Approx. set-time</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>4x2's</td>
<td>Gyproc Bonding</td>
<td>3/4 hours</td>
<td>Caulk joints with Gyproc Skimcoat, Carlite Finish, Gyproc Board Finish. Bonding Coat (applied when plaster used for treating joints and angles has set) ruled to an even surface and properly scratched to form a key for finish coat plaster.</td>
</tr>
<tr>
<td>Grey side of all square or tapered edge Gyproc Plaster Boards</td>
<td>Gyproc Bonding</td>
<td>3/4 hours</td>
<td>Following completion of joint reinforcement, when jointing material has set, apply Gyproc Bonding. Rule to an even surface and properly scratch to form a key for finish coat plaster.</td>
</tr>
<tr>
<td>Front face (the side without the paper overlap) of all Gyproc Plasterboards* and Gyproc Thermal laminates, and the smooth face of MultiBoard and FireCase s</td>
<td>Gyproc Bonding</td>
<td>3/4 hours</td>
<td>Complete the jointing process. Ensure the jointing material has set prior to skimming.</td>
</tr>
</tbody>
</table>

*Gypsum plaster should not be specified as a finish to Moisture Resistant Boards as the board is designed to be suitable for environments and filling is the recommended approach. However if a plaster finish is required, the board should first be treated with ThistleBond-it.
<table>
<thead>
<tr>
<th>Coverage per tonne/thickness of basecoat</th>
<th>Grade of finish</th>
<th>Approx. set time</th>
<th>Thickness of finish/coverage per tonne</th>
</tr>
</thead>
<tbody>
<tr>
<td>120m² at 10mm thickness</td>
<td>Carlite Finish or Gyproc Skimcoat</td>
<td>2/3 hours</td>
<td>375m² at 2mm thickness</td>
</tr>
<tr>
<td>120m² at 10mm thickness</td>
<td>Carlite Finish or Gyproc Skimcoat or Gyproc Board Finish</td>
<td>2/3 hours</td>
<td>300m² at 3mm thickness</td>
</tr>
<tr>
<td>120m² at 10mm thickness</td>
<td>Carlite Finish or Gyproc Skimcoat</td>
<td>2/3 hours</td>
<td>375m² at 2mm thickness</td>
</tr>
<tr>
<td></td>
<td>Carlite Finish or Gyproc Skimcoat or Gyproc Board Finish</td>
<td>2/3 hours</td>
<td>450m² at 2mm thickness</td>
</tr>
</tbody>
</table>

If higher than normal humidity, which no Gypsum plaster is designed to be suitable for. On exposed, untiled, Moisture Resistant Boards, taping 6mm Gyproc Multiboards should also first be treated with ThistleBond-it.

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**Installation – background preparation**

**General**
All surfaces should be dry, clean and protected from the weather. The suitability of a particular background for plastering should be considered in relation to its strength, suction, bonding properties, shrinkage or thermal movement characteristics, water and soluble salt content. Very high or low suction substrates should be pre-treated. The use of ThistleBond-it is recommended for smooth and low suction backgrounds. The high suction of certain backgrounds can be suitably adjusted by sprinkling with water.

**Brickwork/blockwork**
The surface must be clean, dry and suitable to receive gypsum plaster. Control suction with water if necessary. Low suction backgrounds such as some concrete blocks and engineering bricks provide minimal absorption. The joints should be raked thoroughly to give an adequate mechanical key. Smooth backgrounds should be pre-treated with ThistleBond-it.

Dense aggregate concrete blocks do not require wetting prior to plastering, but the plaster should be applied with very firm pressure to ensure intimate contact with the background.

**Concrete**
The surface must be clean, dry, protected from weather and suitable to receive gypsum plaster.
Any mould oils or other agents present should be removed from the surface.
Concrete should be given sufficient time to mature before applying plaster. The plaster should not be applied onto a green background or when any free water is visible.
In-situ or pre-cast concrete which is exceptionally smooth, or which is made from limestone, brick, granite and certain lightweight aggregates, always requires pre-treatment with ThistleBond-it.

In order to reduce the risk of cracking to a minimum, the floating coat should be applied with sufficient pressure to fill all gaps between the units.

Composite wall structures, consisting of concrete columns with brick or block infills, can cause plaster cracking due to differential movement. To overcome this best site practice is to form movement joints at such junctions.

Pre-treatment of low suction backgrounds
Backgrounds such as smooth concrete or concrete made from limestone, brick, granite and certain lightweight aggregates, will require preparation and pre-treatment with ThistleBond-it bonding agent prior to plastering. The surface should be thoroughly cleaned and allowed to dry before pre-treatment.
If there is any doubt about the suitability of a background for direct plastering, please contact Gypsum Industries Technical Sales Department for further advice. ThistleBond-it bonding agent is specially formulated for use on smooth backgrounds. It has many advantages over PVA and is the only product recommended by Gypsum Industries for use with Gyproc plasters. Benefits include:

- Contains fine aggregates for better mechanical adhesion.
- Plaster is applied when dry, allowing flexible timing of application.
- No dilution, so no confusion on site.
- Green coloured for ease of identification in application.

ThistleBond-it should be applied strictly according to the user instructions. Care should be taken not to exceed the recommended plaster thickness, otherwise bond failure may result. Where a greater thickness of plasterwork is required, due to an uneven background for example, an alternative carrier for the plaster should be specified, such as metal lath.

Sand / cement undercoats
Obtaining the correct grade of sand and allowing sufficient time for drying shrinkage of the sand/cement are essential to reduce the risk of subsequent possible defects.
If sand & cement or sand & lime undercoats are used, the following points should be considered:

- Sand and cement will shrink on drying.
- Retarded ready-mixed sand & cement renders may delay shrinkage and may be incompatible with gypsum finish plasters.
- If finish coat plaster is applied too early, differential movement resulting from sand & cement shrinkage may cause cracking in the finish coat. When using Retarded mortars such shrinkage cracking may not be detected until significantly after completion.
- Shelling of finish coat plaster from all types of sand & cement backgrounds can occur due to incomplete shrinkage and / or lack of mechanical key.
- The key provided to sand & cement by scratching needs to be much better than that to a gypsum undercoat.
- Suction should be adjusted by sprinkling with clean water just prior to plastering.

### Expanded metal lath / beads

Plaster should only be applied to galvanised steel or epoxy coated stainless steel. Before plastering, all cut edges, damaged metal lath, staples, nail heads and ends of tying wire should be bent inwards and adequately protected by galvanising, painting or by applying a thick coat of lacquer.
An independent wall lining may be a better solution. Chimney breasts are another area where salt deposits may be heavy.
Construction tips

- For specialist applications, ensure the appropriate product is specified e.g. Thistle X-Ray for x-ray protection work.

- Identify the type of background to be plastered. Refer to Table 1 to determine the appropriate Gyproc Basecoat plaster and its recommended thickness.

- Determine thickness required. Influencing factors include:
  - Finished dimensions of rooms
  - Thickness of grounds
  - Dimensions and positioning of joinery
  - Positioning of heating appliances and other fittings
  - Accommodation of services
  - Fire resistance requirements
  - Where a bonding agent is required, the quoted thicknesses are the maximum.

- Consider background preparation (See Installation details).
Construction tips (cont’d)

- Approximate coverages are given in Table 1.
- Check background for dampness. Gyproc plasters should not be used to isolate dampness or be subjected to continuously moist or humid conditions.
- Determine the routing of services. Conduits should be chased into the background if possible, should be of the minimum permissible dimensions and should avoid high spots in the background.
- Install movement joints as required, corresponding with joints in the background.
- It is recommended that the background temperature should be at least 5°C during application and that the plaster should not be subjected to temperatures below 5°C until it has set. Remember that setting times of finishing plasters will be extended in cold conditions. Dry bagged plaster is not affected by cold temperatures.
- In hot conditions, take precautions to avoid rapid ‘dry-out’ of the plaster, by dampening the background. Once set and dry, Gyproc plasters are suitable for use in temperatures up to 43°C.
- Never apply plaster where a damp background is a recurring problem.
- Apply plasters in accordance with:
Installation

Mixing
Basecoat plasters are pre-mixed with aggregate. Add only clean water to prepare them for use.
- Mix by hand or mechanical whisk (avoid excessive mechanical mixing).
- Use only clean water and clean mixing equipment.

NB Contamination from previous mixes can shorten the setting time and reduce the strength of the plaster when set.

Solid backgrounds
- Apply undercoat plaster with firm pressure.
- Build out to the required thickness in successive coats of approx. 8mm.
- Wire scratch each coat and allow to set before applying the next.
- Rule the final coat to an even surface and lightly scratch to form a key for Gyproc Skimcoat or Gyproc Carlite Finish.

NB The maximum thickness of undercoat is 25mm. Greater thickness normally requires the use of a support for the plaster (e.g. metal lathing), spaced away from the background if necessary.

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Metal lath
- Using Gyproc Bonding, apply a pricking-up coat, forcing it through the metal lath in order to provide a good key to the background.
- Apply a crossed undercut scratch to the pricking up coat to provide a good key for the floating coat of Gyproc Bonding.
- Allow to set but not dry, before applying a floating coat of Gyproc Bonding.
- Rule the final floating coat to an even surface and lightly scratch to form a key for Gyproc Skimcoat or Gyproc Carlite Finish.
- Apply finish plaster once undercoat is set but not dry.

Floating coats should be applied at a coat thickness not exceeding 25mm, and deep wire-scratched between each coat. Thickness should not exceed 8mm for build up coats or 10mm as a final floating coat.

Plasterboard (except skimming)
Where Gyproc Bonding is applied to the grey side of Gyproc Plasterboards, Gyproc Paper Joint Tape should be used to reinforce joints and angles.
- Pre-fill any gap between boards exceeding 3mm with a suitable Gyproc joint filler and spread along each joint.
- Press Gyproc Paper Joint Tape firmly into the Gyproc joint filler, and immediately cover with a further application.
- Allow the joints to set, but not dry, before applying undercoat plaster.
• Apply Gyproc Bonding with firm pressure.
• Build out to the recommended thickness, rule to an even surface and lightly scratch to form a key for Gyproc Skimcoat or Gyproc Carlite Finish.
• Apply finish plaster once undercoat is set but not dry.

X-ray protection
• Use Thistle X-Ray plaster and apply to the thickness specified by the specifier. For further guidance, please contact the Gypsum Industries Technical Sales Department.

Replacing plasterwork
Damaged, insecure or defective plaster can be renewed as follows:
• Strip off existing plaster from the affected area.
• Clean the exposed background and remove any dust.
• Apply ThistleBond-it to smooth, low suction backgrounds.
• Apply a suitable pre-treatment to high suction backgrounds.
• Apply appropriate Gyproc undercoat plaster, build to the required thickness and scratch the surface.
• Apply 2mm of Gyproc Skimcoat or Gyproc Carlite Finish once undercoat is set but not dry.

Always identify the cause of the problem and rectify before replastering.

Decoration
• Apply decorative treatment once plasterwork is thoroughly dry. Gyproc finish plasters can be decorated with most proprietary paint finishes, and will accept most wallcovering adhesives.

Although gypsum based plasterwork must be dry before decorating, a coat of permeable paint can be applied in the interim. Guidance on appropriate paint treatments should be obtained from the manufacturer.