



Thistle Durafinish

Finish plaster for increased resistance to accidental damage

Thistle Durafinish

For increased resistance to accidental damage

Introduction

Overview

Thistle Durafinish is a gypsum finish plaster specially formulated for increased resistance to accidental damage. It enables significantly longer maintenance intervals and lower long-term cost in heavy traffic areas of many types of building.

It may be used on a wide range of backgrounds including most undercoat plasters, and to enhance the surface damage resistance of any British Gypsum partition or wall lining system. It is particularly suited to the applications for GypWall **EXTREME** and GypWall **ROBUST**.

Applications

Thistle Durafinish is designed for the finishing of a wide range of backgrounds, from low-suction (e.g. plasterboards, Glasroc MultiBoard, FireCase s and Rigidur, Thistle Dri-Coat, sufficiently flat concrete) through to the medium-to-high suction of gypsum or cement-based undercoat plasters.

Most backgrounds which normally require a bonding agent to provide adhesion can be directly plastered with Thistle Durafinish (e.g. MR plasterboards, cast in-situ concrete, previously plastered surfaces) provided they are clean, sound and reasonably dry.

Standards

Thistle Durafinish complies with *EN 13279-1 type B7, "gypsum plaster for plasterwork with enhanced surface hardness"*.

All British Gypsum plasters are manufactured under a quality system independently audited and certified as conforming with *ISO 9001: 2000*.

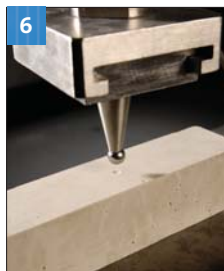
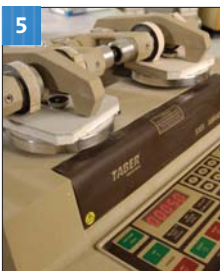
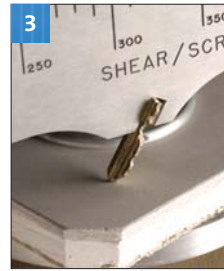
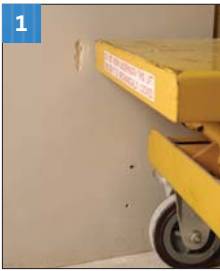
Performance

Damage resistance

Thistle Durafinish has excellent resistance to glancing impacts and repeated abrasion typical of the accidental damage which causes scratching, gouging or chipping of other wall finishes. This can reduce the scope of, and

extend the intervals between, maintenance, helping to reduce costs and maximise the occupiers' use of the building. It also has excellent adhesion to most backgrounds, so damage to small areas does not spread or cause debonding, making repair easier.

Property tested	Test method	Real examples	Damage measured	Performance		Improvement %
				Thistle Durafinish	Thistle Multi-Finish	
Glancing impact	150kg trolley, 30° angle, 1 m/s speed, simulating impact energy of 75J	Corners of furniture, trolleys and wheeled equipment, general light impacts	1 Depth of indentation	0.68mm	2.60mm	74%
Scratch resistance	Taber Shear /Scratch tester, standard diamond stylus	Light contact with very sharp objects	2 wt loss	0.0040g	0.07g	94%
Scratch resistance	Taber Shear /Scratch tester, modified to use key, 180g load	Light contact with sharp objects	3 visual assessment	no damage	visible scratch	-
	Taber Shear /Scratch tester, modified to use key, 3.4kg load	Medium-heavy contact with sharp objects	3 wt loss	0.0030g	0.0195g	85%
Scratch elcometer	-	Medium contact with sharp objects	4 Weight loss	0.08g	0.2g	60%
Abrasion resistance	Taber Abraser	Rubbing of chair backs	5 Weight loss	0.27g	0.30g	10%
Surface hardness average	EN 13279-1 - ball indentation	Heavy objects leaning on wall	6	15 N/mm ²	15 N/mm ²	0%
Compressive strength average	EN 13279-1 - prism crush	none	7	12N/mm ²	10 N/mm ²	20%
Flexural strength	EN 13279-1 - prism 3-point bend	none	8	5.0 N/mm ²	3.5 N/mm ²	43%

Performance (continued)

Limitations

Thistle Durafinish may not be suitable where resistance to determined and deliberate attack is required. Resistance to heavy perpendicular impact is largely determined by the background to which Thistle Durafinish is applied. For advice on the suitability of Thistle Durafinish for other situations, please contact the British Gypsum Drywall Academy Technical Advice Centre.

Fire protection

Thistle Durafinish achieves a Euroclass A2, s1-d0 reaction to fire rating.

Fire resistance

Gypsum plasters provide good fire protection due to the unique behaviour of gypsum in fire. When gypsum-protected building elements are exposed to fire, dehydration by heat (calcination) occurs at the exposed surface and proceeds gradually through the gypsum layer. Calcined gypsum on the exposed face adheres tenaciously to uncalcined material, retarding further calcination which slows as the thickness of calcined material increases.

While this continues, materials adjacent to the unexposed side will not exceed 100°C – below the temperature at which most materials will ignite and far below the critical temperatures for structural components. Once the gypsum layer is fully calcined, the residue acts as an insulating layer while it remains intact.

Thermal resistance

It should be assumed that Thistle Durafinish makes a negligible contribution to thermal resistance of building elements.

Effect of temperature

Unlike other gypsum plasters, ambient and background temperature must be maintained above 5°C until fully dry to obtain the full damage resistance. Once fully set and dry, Thistle Durafinish is suitable for situations where the temperature does not exceed 49°C. Dry, bagged plaster is not affected by low temperatures.

During application in hot and/or dry conditions, care should be taken to ensure that rapid loss of water is avoided. A proportion of the mixing water is required in order to set and achieve full strength. If the water is dried off too rapidly, the strength of the plaster will be impaired.

Effect of condensation and other moisture

While Thistle Durafinish has greater water resistance than most gypsum plasters, it should be protected from continuous exposure to moisture. Prolonged or repeated exposure to moisture may cause a loss of strength and/or adhesion.

Identification

Thistle Durafinish is light grey in colour when dry, enabling it to be easily distinguished from Thistle Board Finish and Thistle Multi-Finish, which are pink.

Properties

Coverage per bag m ²	Setting time hours	Water requirement litres	Dry set weight kg/m ²	Pallet quantity kg
10 @ 2mm thickness	1.5	11.5 per bag	3.4	1050 (42 bags)

Thistle Durafinish

For increased resistance to accidental damage

Installation

General

Thistle Durafinish has similar working characteristics, setting time and suction resistance to Thistle Multi-Finish, and is applied in essentially the same way, to either plasterboard or undercoat plasters.

Background preparation

Plasterboards – including MR (moisture resistant) boards:

Skimming should be specified only on the face of boards, i.e. the side without a paper overlap (the ivory face of Gyproc WallBoard, Gyproc WallBoard ТЕН, Gyproc DuraLine and Gyproc HandiBoard, and the coloured face of Gyproc FireLine and Gyproc SoundBloc). Joints must be reinforced with Thistle ProTape FT50 or FT100, or Gyproc Joint Tape. A range of corner and stop beads is available for reinforcement of external angles and edges.

Glasroc MultiBoard, FireCase s and Rigidur:

Skim finishing using Thistle Durafinish should be to the smooth face of the board. Application techniques and joint reinforcement are similar to those used on plasterboards.

Undercoat plasters:

Gypsum-based undercoats should be left reasonably flat and with a scratch key. They are usually finished when set but not dry – if they are dry there will be higher suction, which may need to be reduced by damping down before finishing. Cement-based undercoats shrink on drying and can crack, up to days or even weeks after application.

If Thistle Durafinish is applied before the shrinkage is complete, there is an increased risk of delamination or cracking of the finish, particularly if the undercoat was not adequately keyed. The key provided to cement-based backgrounds therefore needs to be much better, and the drying time allowance much longer, than for gypsum-based undercoats.

Retarded ready-mixed cement-based mortars may have delayed shrinkage, and may contain additives which interfere with the strength or setting of Thistle Durafinish.

Storage

Bags should be stored dry, as absorption of water shortens the setting time, causes set lumps to form in the bags and may reduce the strength of the set plasterwork. If storing on a concrete floor, dry timber platforms should be provided. Thistle Durafinish stored correctly has a shelf life of 4 months and bags are printed with the 'use by' date in order to permit use in strict rotation.

Mixing

Mix by adding to clean water in clean mixing equipment. Contamination from previous mixes adversely affects the

setting time and the strength. Fresh contamination has more effect than old – so equipment should be washed just after mixing, rather than just before. Suitable for mixing by hand or mechanical whisk of a slow speed, high torque type. A range of suitable mixers and paddles is available in the Gyproc Tools range.

While mechanical mixing speeds the process up, there is no need to continue mixing after dispersing lumps and achieving the right consistency – over-mixing wastes time and energy, can affect setting times, lead to deterioration in workability and create difficulty in achieving a flat finish.

Application

Plastering to board backgrounds:

Plaster is applied with firm pressure, built out to 2mm thickness in two applications and trowelled to a smooth matt finish as the plaster progressively sets. Good site practice should be followed, as outlined in *BS EN 13914 Code of Practice for Internal Plastering*.

Thistle Thin-Coat Angle Bead or Thistle Thin-Coat Mini Mesh Bead is fixed to the plasterboard angle by embedding in 'dabs' of Thistle Durafinish plaster. To hold the bead in correct alignment as the plaster sets, it is recommended that additional mechanical fixings are used (non-rusting nails, screws or staples) as required. Before this plaster sets, any surplus should be wiped from the corner, because scraping it away later may damage the zinc coating. If the bead is fixed to the board 'dry', the adhesion may be reduced because it is difficult to squeeze plaster between the bead and the plasterboard. Before applying Thistle Durafinish to Gyproc plasterboards or Glasroc MultiBoard, flat joints are reinforced using Thistle ProTape FT50 or FT100, or any gaps exceeding 3mm are pre-filled and joints reinforced using Gyproc Joint Tape. Thistle ProTape FT50 and FT100 fibre tapes are self-adhesive and are fixed to the board surface before application of plaster. Gyproc Joint Tape is embedded in the first coat over each joint, pressed firmly into the plaster and immediately covered with a further application. Sufficient plaster is left under the tape to ensure good adhesion and to ensure that the joint treatment is free from air bubbles. Plaster is applied to the whole surface after the joint treatment has partially set, but not dried.

For joints which may be subject to more movement (including around door or window apertures, where board edges are not fully supported, or on ceilings below floors which are susceptible to high deflection), Gyproc Joint Tape embedded in the finish provides better resistance to cracking than glass fibre tapes.

Installation (continued)

Plastering to undercoat plasters:

Apply with firm pressure, built out to 2mm thickness in two applications and trowel to a smooth matt finish as the plaster progressively hardens through setting or by loss of water into the background. If background suction is excessive, dampen it down before finishing.

NB The full thickness of 2mm must be applied for the optimum performance to be achieved.

Decoration

Gypsum-based plasterwork must always be thoroughly dry before decorating, although a coat of permeable paint can be applied in the interim. Plaster surfaces can be decorated with most proprietary paint finishes and will accept the majority of wall covering adhesives. The manufacturers' recommendations in respect of applied decorative treatments should always be followed.

Tiles up to 20kg/m² can be applied directly to the Thistle Durafinish, except where the system includes a bonding agent. As the total weight of tiles and plaster applied over a bonding agent is limited to 20kg/m², consideration should be given to tiling directly to the background. If plastering to provide a background for tiles, avoid polishing the surface. Polished plaster surfaces should be roughened and a suitable primer used.

Maintenance

Thistle Durafinish on plasterboard or an undercoat plaster provides a plastering system suitable for high wear areas, with the limitations referred to above. To avoid downgrading the surface and system performance, any repairs should be carried out using Thistle Durafinish.

Minor surface damage and scratches or dents up to 5mm deep can be repaired by applying Thistle Durafinish, while deeper damage may also require attention to the background. Replacement of backgrounds (including boards), where necessary, should be to the original specification.

For best repair results, the Thistle Durafinish should be feathered into the surrounding surface as it sets using a damp brush – sanding once dry may not give a satisfactorily flat surface due to its abrasion resistance.

Thistle Durafinish

For increased resistance to accidental damage

Health & Safety

1. Identification of the substances / preparation and company

Building plasters

Thistle Durafinish

Supplier British Gypsum Limited
East Leake
Loughborough
Leicestershire
LE12 6HX

Telephone 08705 456123

Recommended uses: Gypsum building plaster used to provide a smooth, flat surface to internal walls and ceilings.

2. Composition / information on ingredients

General composition: Calcium sulphate hemihydrate. Natural constituents may include clay, limestone and minor amounts of quartz. Additives may include minor amounts (less than 4%) of hydrated lime and polymeric binders.

3. Hazards identification

THE MOST IMPORTANT HAZARDS ARE:

This product is not classified as dangerous according to CHIP.

Plaster may form an alkaline solution on contact with body moistures or when mixed with water.

Dust from mixing or sanding may irritate the respiratory system, skin and eyes.

4. First aid measures

Eye contact Wash eyes with clean water.

Skin contact Wash thoroughly with soap and water.

Ingestion DO NOT INDUCE VOMITING. Rinse out mouth thoroughly and give plenty of water.

Inhalation If irritation occurs, remove person to fresh air.

General Get medical attention if any symptoms persist.

5. Fire fighting measures

The product does not pose a fire hazard. However, packaging materials may burn.

Suitable extinguishing media – water, foam, carbon dioxide or dry powder.

6. Accidental release measures

Avoid creating dust – see Section 8 Exposure control / personal protection for recommended personal protective equipment.

Plaster can be mixed with water, avoid eye contact or prolonged, repeated contact with skin – see Section 3 Hazards identification.

Prevent plasters from contaminating drains.

7. Handling and storage

Use – Minimise dust generation when opening bags, mixing or sanding plasters in poorly ventilated places. Avoid eye contact or prolonged or repeated contact with skin – see Section 8 Exposure control / personal protection and Section 3 Hazards identification.

Manual handling – Supplied in approximately 25kg bags – use an appropriate lifting technique.

Mechanical handling – In order to maintain the stability of the palletised load, it is important that the lift truck fork length and centres are set to correctly support the load.

Storage – Store in dry conditions. All powdered products can settle in transport. To maintain stability, place pallets on firm level ground. Do not stack more than one lift high

Pallet stacking heights

Product	Bag weight kg	Pallet stack height packs
Thistle Durafinish	25	2

8. Exposure control / personal protection

Workplace exposure limit

Substance	Total inhalable	Respirable
Calcium Sulphate Hemihydrate	10mg/m ³ (8hr TWA)	4mg/m ³ 8hr TWA
Hydrated Lime	5mg/m ³ (8hr TWA)	–
Quartz (silica)	–	0.1mg/m ³ (8hr TWA)

Health & Safety (continued)

Personal protection

Respiratory Use in a well ventilated area. Where practicable use engineering methods to control dust levels. If the exposure standards could be exceeded use a disposable face mask complying with *EN 149 FFP2*

Skin Wear appropriate clothing to protect against repeated or prolonged skin contact.

Eye If there is a risk of material entering the eye, wear eye protection to *BS EN 166*

9. Physical and chemical properties

Appearance Dry powder

Odour Odourless

pH As wet plaster mix - neutral 7 to alkaline 13

10. Stability and reactivity

No special physical conditions need to be avoided. No specific restrictions regarding incompatible materials.

11. Toxicology information

Inhalation Plaster dust may irritate the respirable system. No known long term effects.

Skin contact Wet plaster may form an alkaline solution and irritate the skin. Dry powder can cause irritation.

Eye contact Wet plaster may form an alkaline solution and irritate the eye. Dry powder can cause irritation.

Ingestion Small quantities of plaster should not cause any significant reaction or long term effect.

12. Ecological information

Slightly soluble in water, forms a suspension and solidifies.

13. Disposal consideration

Wastes from gypsum products are normally classified as 'non-hazardous' but should not be co-disposed with municipal waste. Dispose at an authorised landfill site in accordance with the Waste Management Licensing Regulations (see **Section 16** – Other information).

14. Transport information

Not classified as hazardous for transportation.

15. Regulatory information

Not classified under the CHIP regulations.

16. Other information

Control of Substances Hazardous to Health Regulations
The Manual Handling Operations Regulations
HSE Guidance Note EH40: Workplace Exposure Limits
Gypsum Wastes – Environment Agency Information Sheet.
The British Gypsum **WHITE BOOK**
The British Gypsum **SITE BOOK**

Note to User:

This Product Data Sheet does not constitute a workplace risk assessment for COSHH.

There are a number of situations where the approach to manual handling of British Gypsum products should be considered. For further guidance, please refer to the Manual Handling section of the **SITE BOOK** and Manual Handling Guide, available to download from www.british-gypsum.com

Date of previous version: First edition.

Gyproc, Thistle, Gypframe, Glasroc and Arteco are all registered trade names of BPB United Kingdom Limited. Isover is a registered trade name of Saint-Gobain.

British Gypsum reserves the right to revise product specifications without notice. The information in this document was correct to the best of our knowledge at the time of publication. It is the user's responsibility to ensure that it remains current prior to use.

The information in this document is for guidance only and should not be read in isolation. Users should read and familiarise themselves with all the information contained in this document and ensure that they are fully conversant with the products and systems being used, before subsequent specification or installation.

For a comprehensive and up-to-date library of information visit the British Gypsum website at: www.british-gypsum.com

Technical enquiries
British Gypsum Limited
Drywall Academy
East Leake
Loughborough
Leicestershire
LE12 6JT

Telephone: 08705 456123
Fax: 08705 456356
E-mail: bgtechnical.enquiries@bpb.com

Training enquiries: 08702 406040
www.british-gypsum.com



FM 52358

British Gypsum February 2008 DS-118-01