



# Thistle Hardwall

## Product Data Sheet

### Introduction

#### Overview

Thistle Hardwall is a gypsum undercoat plaster for use on most masonry. With a final coat of Thistle Multi-Finish, it provides a smooth, inert, high quality surface to internal walls. The combination has superior impact resistance, earlier surface drying, a higher than normal resistance to efflorescence, and gives a durable base for the application of decorative finishes. Thistle Hardwall is a lightweight, retarded hemihydrate, pre-mixed gypsum plaster, incorporating special aggregates and additives, requiring only the addition of clean water to prepare it for use. It is suitable for application by hand or by plaster projection machine.

#### Applications

Background/ lining	Coat thickness mm	Approx. weight set and dry kg/m <sup>2</sup>	Approx. coverage m <sup>2</sup> /1000kg
Common brick walls and concrete bricks (with raked joints)	11	9.3	115 - 130
Dense aggregate and lightweight aggregate concrete blocks.	11	9.3	115 - 130
Aerated concrete blocks (pre-treatment may be necessary to control high suction)	11	9.3	115 - 130
No-fines concrete	11	9.3	115 - 130

**NB** When applying by plaster projection machine, an allowance should be made for a reduction in coverage of approximately 10%.

### Standards

Thistle Hardwall complies with *EN 13279-1 types B4/20/2 and C3/20*, and is manufactured under a quality system independently audited and certified as conforming with *ISO 9001: 2000*

### Performance

#### 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

11mm Thistle Hardwall with a final coat of 2mm Thistle Multi-Finish (total thickness 13mm) has a thermal resistance (R) of 0.04m<sup>2</sup>K/W.

#### Acoustic performance

Thistle Hardwall may be used within the Robust Detail constructions E-WM-1, dense aggregate block cavity separating wall, and E-WM-2 lightweight aggregate block cavity separating wall. In these applications the specified thickness is 13mm and attention to detail is important to achieve the required sound insulation, including plastering the complete wall surface down to finished floor level where appropriate. Refer to the current Robust Details handbook for full details.

#### Effect of temperature

Thistle Hardwall is not suitable for plastering onto frozen backgrounds but it may be used under frosty conditions provided that, after plastering, the surfaces are adequately protected from freezing.

Once fully set and dry, Thistle Hardwall is only suitable for situations where the temperature does not exceed 49°C. Dry, bagged plaster is not affected by low temperatures. During the application of gypsum plasters in hot and / or dry conditions, care should be taken to ensure that rapid loss of water is avoided. Gypsum plasters require a proportion of the mixing water 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

Thistle Hardwall should be protected from continuous exposure to moisture. Prolonged or repeated exposure to moisture may cause a loss of strength and/or adhesion.

#### Coverage

Coverage per bag m <sup>2</sup>	Setting time hours	Water requirement litres	Dry set weight kg/m <sup>2</sup>	Pallet quantity kg
3.0 @ 11mm thickness (applied by hand). Approx 10% less if sprayed	1.5 - 2	15.0 per bag	9.3 @ 11mm + 3.4 (finish)	1125 (45 bags)

### Background preparation

Surfaces should be reasonably dry, clean and protected from the weather, and suitable for the chosen specification. In addition, some masonry backgrounds of exceptionally high suction may require pre-treatment with Thistle GypPrime to control their suction.

### 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 Hardwall 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

Thistle Hardwall is pre-mixed with aggregate and only clean water needs to be added to prepare it for use. Hand mixing should be carried out in a clean tray or bath. Excessive mechanical mixing should be avoided. Tools and water used in mixing must be clean. Contamination from previous mixes can shorten the setting time and in turn reduce the strength of the plaster when set.

### Application

Thistle Hardwall should be applied with firm pressure, built out to the required thickness, ruled to an even surface and lightly scratched to form a key for Thistle Multi-Finish. For machine application, the plaster should be sprayed on to the background in the form of a ribbon. The consistency should allow the ribbons to run together. When a substantial area is covered, Thistle Hardwall is worked and ruled as in hand plastering. It is easier to attain the required thickness of plaster in one application by machine, but the total thickness should not normally exceed 25mm (subject to background suitability).

### Finishing

Finish using Thistle Multi-Finish.

### Decoration

Thistle plasters can be decorated with most paint finishes and wallcoverings. Follow manufacturers' recommendations. Impermeable finishes, including tiles, should not be applied until the background and plaster are dry. A permeable paint can be used in the interim. Take care with Thistle Hardwall which dries from the surface, appearing surface dry before it is fully dry in depth.

*BS EN 13914 Code of Practice for Internal Plastering* states that plastering should be done under similar or better lighting conditions than the final work will be judged in. This is particularly important for glossy finishes and / or low-angle natural or artificial lighting.

### Tiling

Tiles up to 20kg/m<sup>2</sup> can be applied directly to the Thistle finish. If plastering to provide a background for tiles, avoid polishing the surface. Polished plaster surfaces should be roughened and a suitable primer used. Tiles should not be applied directly to Thistle undercoats, with the exception of Thistle Dri-Coat.

### Maintenance

Thistle Hardwall with a final coat of 2mm Thistle Multi-Finish provides a plastering system suitable for high impact / wear areas. If the plaster is correctly applied, it should not require any form of maintenance.

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