

# Rendering Aggregate Concrete Blocks

## INTRODUCTION

**Renderers have been applied very successfully to aggregate concrete block backgrounds for decades. Aggregate blocks provide a moderately strong to strong background with moderate suction and unless the blocks used were intended for direct decoration rather than a rendered finish (i.e. with a paint quality finish) also afford an excellent mechanical key. Problems with renderers on aggregate blocks are extremely rare as they have all the characteristics needed for the easy application of a durable render.**

**Comprehensive guidance on external rendering was first published by the Cement and Concrete Association (C & CA) in 1948 and this guidance, which went through several editions, has proved to be both reliable and authoritative. The C & CA guidance did not cover the proprietary 1 and 2 coat renderers which have been gaining in popularity and which have different characteristics to traditional renderers and therefore may need different guidance for their application.**

## APPLICATION GUIDANCE

This guidance note gives application guidance for the successful use of renderers on aggregate blocks.

### BLOCK TYPES AND SURFACE TEXTURES

For the purpose of this guidance note aggregate concrete blocks can be considered as falling into the following categories:

Block type	Block texture
<b>Dense Blocks</b>	Standard texture Paint quality/close textured
<b>Lightweight Aggregate Blocks</b>	Standard texture Paint quality/close textured
<b>Ultra Lightweight Aggregate Blocks</b>	Standard texture



**TABLE 1 BLOCK TYPES AND TEXTURES**

**For traditional and two coat polymer modified proprietary renders the ideal rendering background has moderate suction and a good mechanical key. Standard texture dense, lightweight aggregate and ultra lightweight aggregate blocks all have these characteristics.**

**Pre-treatments**

Traditional renders and two coat polymer modified proprietary on standard texture blocks should require no pre-treatment. Single coat proprietary renders on standard texture blocks should require no pre-treatment. Pre-treatments are advised on paint quality blocks using traditional renders and also may be necessary when using proprietary renders (See render manufacturer’s literature). Aggregate blocks should not be wetted prior to the application of renders.

Block Type	Background Pre-treatment	Number of coats
<b>Dense</b> (STANDARD) Dense (PAINT QUALITY)	None Stipple or spatterdash coat	2 2 + pre-treatment
<b>Lightweight</b> aggregate (STANDARD) Lightweight aggregate (PAINT QUALITY)	None Stipple or spatterdash coat	2 2 + pre-treatment
<b>Ultra lightweight</b> aggregate (STANDARD)	None	2

**TABLE 2 PRE-TREATMENTS AND RENDERING RECOMMENDATIONS FOR TRADITIONAL RENDERS**

**Stipple coat:** A stipple coat mix should be prepared using one part cement with one and a half parts of sharp sand made into a consistency of a slurry with water and a PVA bonding agent mixed in equal parts. The mixture should be pushed into the surface with a course brush and then dabbed with the brush to give a course finish which should be protected from rapid drying out for seven days.

**Spatterdash coat:** A spatterdash coat mix should be prepared using one part cement to two parts of course sand with just sufficient water to form a thick slurry. The spatterdash should be thrown against the background with a small scoop to form a layer of 3-5mm. The mix should be stirred regularly to prevent settlement. The spatterdash layer should be protected from rapid drying out for 7 days.

Block Type	First Coat	Final Coat
<b>Dense</b> blocks	ii/M6	iii/M4
<b>Lightweight</b> aggregate and <b>Ultra Lightweight</b> aggregate	iii/M4	iii/M4

**TABLE 3 RENDER DESIGNATIONS FOR TRADITIONAL RENDERS**

Render Designation	CEMENT:LIME:SAND with or without air entrainment	CEMENT:SAND with or without air entrainment other than lime)	MASONRY CEMENT:SAND (cement filler)	MASONRY CEMENT:SAND (lime cement filler)
ii/M6	1 : 1/2 : 4 to 4 1/2	1 : 3 to 4	1 : 2 1/2 to 3 1/2	1 : 3
iii/M4	1 : 1 : 5 to 6	1 : 5 to 6	1 : 4 to 5	1 : 3 1/2 to 4

**TABLE 4 RENDER MIX PROPORTIONS BY VOLUME FOR TRADITIONAL RENDERS**

We recommend for traditional two coat renders the undercoat being applied in a **thickness not exceeding 15mm** and the final coat being applied in a **thickness of 5-7mm**.

For proprietary two coat renders, the manufacturer's literature should be consulted for base coat and final coat recommended thicknesses but these are generally similar to those for traditional renders.

Proprietary single coat renders may also be used on aggregate block backgrounds in accordance with the render manufacturer's instructions.

**Builders considering the use of proprietary single coat render systems must exercise extreme caution to accurately adhere to the render manufacturers' design and specification guidelines. Furthermore, during application, strictly adhere to the specific and expansive application instructions, paying particular attention to prevailing weather conditions.**

**These render systems have often worked well but on several occasions single coat type renders have failed. The cause of the failures has not yet been identified. Until it has and appropriate steps taken to avoid similar failures have been established, we are unable to recommend the use of proprietary such single coat renders.**

**PLEASE NOTE that traditional rendering applications are not so seasonally and conditionally demanding.**

### Movement Joints

Aggregate blockwork for rendering should have vertical movement joints incorporated at centres not exceeding 9m. Distances between joints should be measured around corners as these occur. Low panels such as found above and below openings should be reinforced with welded wire type bed joint reinforcement.

Movement joints may be hidden behind building features such as down pipes. Where this spacing is not possible and expressed movement joints are not desired, it is possible to use welded wire type bed joint reinforcement to extend the distance between movement joints. One course of bed joint reinforcement should be included two courses from the top of the masonry panel, two courses from the bottom of the masonry panel and one course at approximately mid panel height.

