MASTERWALL

M-TEX

# A guide to light reflective values and specification for M-TEX Coatings

TECHNICAL DOCUMENT:

## LRV AND SPECIFICATION

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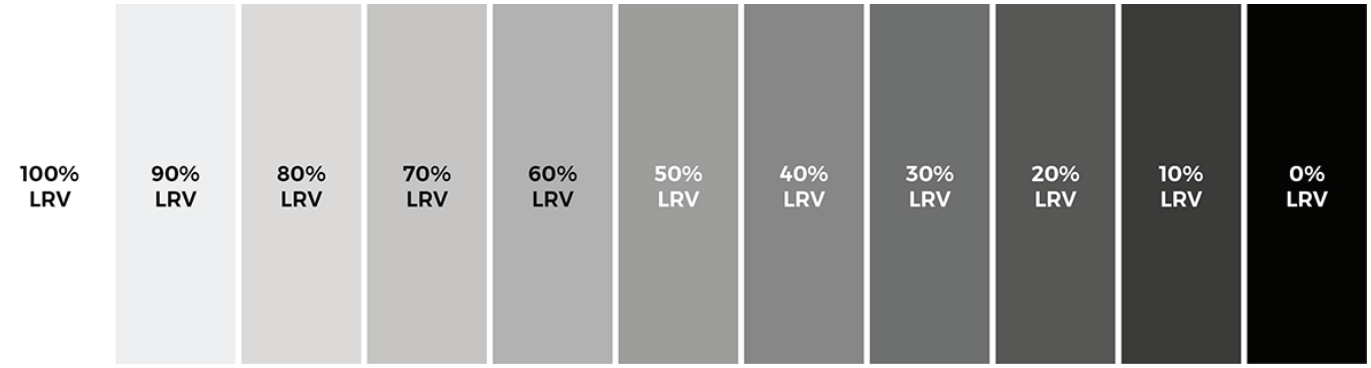
**MASTERWALL M-SERIES DIRECT-TO-FRAME SYSTEM 8.6.2021**

## The Light Reflectance Value (LRV)

When selecting render colours, it is important to consider the LRV (Light Reflectance Value) of a given colour. The Light Reflectance Value (LRV) measures the amount of light reflected from a finished surface, measured on a scale for coatings being white approx. 92% and black being approx. 4%.

Exterior Light Reflectance Values (LRV) are used to assess the amount of heat absorbed when the building exterior is exposed to direct sunlight. Dark colours absorb significantly more heat resulting in thermal stress, causing movement and cracking in some substrates.

In evaluating the effect of the colours LRV, the sunlight exposure, substrate and building elements need to be taken into consideration by the colour consultant.  The LRV value is normally stated in the paint/render manufacturers colour chart.




## What may occur when specifying a colour with a low LRV?

The following can occur when selecting a deep/dark colour with low LRV's. The following  is not an exhaustive list and acts as a guide of the main occurrences to be aware of.

### Decreased colour durability

As dark colours with low LRV's absorb more heat/ Ultra Violet Radiation this can cause the a breakdown in the chemical bonds. When certain molecules absorb UV light, the light provides enough energy to break chemical bonds, destroying, or at least rearranging, the molecules in a process called photo-degradation. As such this can result in  fading of the render colour over time.

### Expansion and contraction of substrate

Due to the higher heat absorption of dark/deep colours this can cause substrates to move as they expand and contract through heating up and cooling down. This in turn places stress on the render system itself and the underlying substrate resulting in a loss of adhesion via delamination, crazing and cracking and blistering. It is also important to consider appropriate control joints be specified in the design process of the façade to help mitigate any stress from thermal expansion and contraction.

## How does this affect the warranties of a Masterwall render system?

Masterwall is not liable for any fading, crazing, or delamination from thermal expansion contraction of substrates and UV exposure that may occur due to the specification of render colours that fall below the recommended LRV rating.

## Solution

To maintain your Masterwall warranty we recommend specifying an approved Masterwall top coat such as M-Tex Flex Coat, tinted to match chosen render colour. Please contact Masterwall for an approved system when specifying colours with an LRV lower than the permitted rating. We are able to advise on the correct system specification for your project.

The table on the right indicates LRV limitations over various substrates as a guide. ⟶

| SUBSTRATE | Min LRV |
|---|---|
| Masterwall (EPS) | LRV40 |
| Fibre Cement | LRV40 |
| Core Filled Fibre Cement | LRV40 |
| AAC | LRV25 |
| Concrete (Tilt, Precast, Off form) | LRV25 |
| Brickwork/Blockwork | LRV25 |
| Magnesium Board | LRV40 |