



# Recommended Best Practice Ultralite Refractory Castable (URC)

## Introduction

Ultralite Refractory Castable (URC) is a blend of Ultralite Loose Fill and high grade refractory aggregates and cements, which results in an exceptional castable product. Ultralite Refractory Castable is available in three main grades with maximum service temperatures ranging from 1100°C (2012°F) up to 1300°C (2372°F). This flexible material allows a variety of applications to be handled, from the creation of cast shapes that are lightweight with exceptional heat insulating properties to cement for refractory linings.

- URC-11 – Maximum service temperature of 1100°C/2012°F
- URC-12 – Maximum service temperature of 1200°C/2192°F
- URC-13 – Maximum service temperature of 1300°C/2372°F

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## Recommended Usage

- Ensure that sufficient material is mixed to complete the job in hand.
- If producing blocks of any description, always use a mould release agent such as Paraffin, Silicone, or vegetable or petroleum based oils. Silicon rubber moulds may require an alternative release agent.
- Ensure that the dry material and the water to be added are at ambient temp, ideally between 15-25°C. The castable should not be prepared in excessively cold or hot conditions (less than 10°C or more than 40°C).
- Ultralite URC Castable is a “ready mix”, however if using small quantities, (less than a full 20 litre bag) it is advisable to empty the contents of the bag and mix thoroughly in case any migration of fines has occurred during transportation or storage. Put the unused material back into the bag and reseal tightly to store.
- If more than one bag of material is required to complete the job, no pre-mixing should be required, as this will be done quite naturally during the adding of, and mixing with water.
- It is normal practice to use a mechanical (cement) type or a planetary (Hobart) type mixer for larger quantities, say half a bag or more. The amount of water to be added needs to be determined by trial in order to suit the application. Too little or too much water may reduce the dry/cured strength.
- As a general indication, a suitable ratio to begin trials would be 2 parts castable to 1 part or less of water, by volume, not weight.
- Once the castable/water ratio is determined, add half the required amount of water to the mixer before putting in the dry Castable. This helps to reduce the amount of dust generated.
- Add all of the remainder of the dry Castable and the remainder of the water a little at a time and mix for 3 - 5 minutes until it has a thick cream like consistency. Select a mixer speed that provides a good cascading effect without causing the Castable to be thrown out of the mixer.
- Fill the moulds using gentle vibration or trowel into place as required, completing the operation in as short a time as is practical, ideally no more than 30 minutes. Once filled or trowelled into place, cover the Castable with an impervious sheet (plastic/polythene etc) to prevent the Castable from drying out before it has cured. The cover should be kept in place ideally for a minimum of 24 hours. If a quick mould turnover is required, remove the piece from the mould as soon as it is hard but ensure continuation of curing by preventing any drying out of the piece until 24 hours has elapsed.
- After curing the cover should be removed and the Castable allowed to dry, ideally force dried at a temp above 30°C but below 105°C in order to gain maximum dry strength.
- The item can be pre-fired up to its maximum service temp if required, before installation.