

## Data Sheet - Installation & Lifting

CSTB7

### LAYING

This section provides guidance on protecting cast stone during construction, laying, bedding, joining, cutting, the recommended grade of mortars for cast stone products, and casting-in any required fixings.

Cast stone units should only be installed by suitably qualified personnel. During construction, the units should be protected at the end of each day and it is advisable to protect finished work.

The fixing of cast stone should be considered at the design stage so that any required fixings can be cast-in during production. We will be able to advise you on the most cost-effective solutions at the point of your inquiry.

Cast stone units should be designed to minimise on site cutting. They are typically designed to be fixed with joint sizes of between 5-10mm and should be laid and adjusted to final position while the mortar is still plastic. It is vital to specify the correct mortar designation, which is often different to that used for the surrounding brickwork. Mortars containing lime give a stronger bond than those containing air-entrainment.

### LIFTING

Cast stone has an advantage over quarried natural stone in that units can contain cast-in lifting attachments. These come as M16 or more delicate M12 casting threaded sockets or as proprietary lifting clutch systems, and assist the Specifier in meeting their CDM Regulations responsibilities.

For delicate placement of large stones, a rope block-and-tackle system, suspended from a runway beam attached to the top of the scaffold, or even suspended from a crane hook, gives controllable, gentle adjustment. Chain blocks should not be used as they may mark the stone.

Materials used for lifting inserts depend upon the eventual position in the building, but in the great majority of applications where they are covered by subsequent construction and encased in an alkaline environment (i.e. mortar bed), BZP units are perfectly suitable and more cost-effective than stainless steel.

Safety of lifting operations has to be of paramount concern and relevant sections of HASAWA and Manual Handling Regulations should be observed, and Risk Assessments conducted before work commences. The following points should be considered:

- Where screw-in wire bond lifting loops are used, it is essential to ensure the threads are screwed fully home, and that a vertical lift is used – lifting capacity reduces very rapidly with angled lifts.
- When a threaded lifting eye has to be used at a right angle (e.g. a socket insert in the back of a panel) then articulated loops are available.
- With two point lifts, use a spreader beam to avoid angled slings.
- Snatch loading by cranes cannot be calculated for and must be avoided as it will damage both stones and lifters.
- Lifting stones directly with slings is unstable and can be unsafe.
- Webbing slings can damage unprotected arises.
- Wire rope or chain slings are completely unacceptable