# SUPERLATCH®

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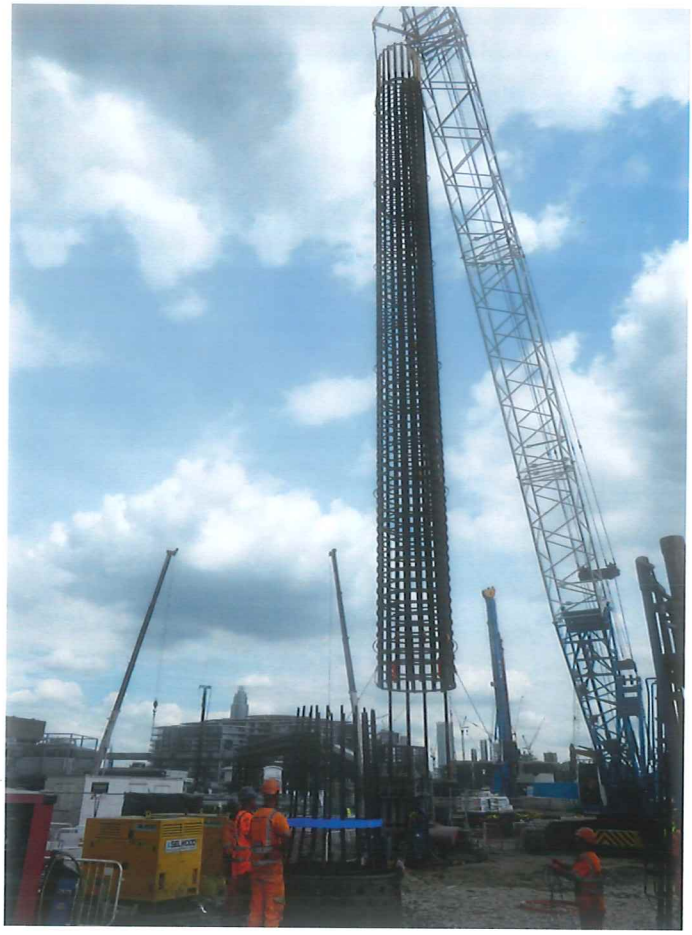
## Basic Concept

**SUPERLATCH® is a highly efficient means of connecting conventionally spliced reinforcement cages during the construction of Rotary-Bored and CFA Piles as well as Diaphragm Walls.**

During foundation construction, multi-section reinforcement cages are partially lowered into a pile-bore or D-wall trench and are suspended on temporary supports, either the pile casing or guide walls. Securing the cage in place allows subsequent reinforcement cages to be moved and lowered into position by crane. The additional sections are then offered up and connected, the process being repeated until the full depth of reinforcement has been attained in accordance with the design.

Moving, positioning, connecting and lowering reinforcement cages can be problematic due to their size and weight. These activities entail the use of a high risk working environment. Any unplanned movement of either reinforcement cage can cause injury to the operatives installing.

Traditionally, the connections between sections of reinforcement cages have taken the form of multiple, separate U-bolts or shackles secured by the Contractor to the individual bars or bands of the cages as they are brought together. This practice requires the operatives to work with their arms/hands through the cage apertures to form the connection, and can result in serious injury to the operatives as the overlapped reinforcement cages move. This creates an unacceptable level of risk for which an alternative method is required.



- *Reduces Risks to Operatives*
- *Increases Productivity*
- *Simplifies Installation*

SUPERLATCH is usually installed off site during the manufacture of the pile cage, thereby reducing on site hot works activities and increasing cage quality control during manufacture.

SUPERLATCH works in conjunction with metallic plates when used on a diaphragm wall or a continuous metal band on traditional circular piles.

The receiving plate/band is usually fitted to the top of the first reinforcement cages. SUPERLATCH shackles are fillet welded to the bottom of the subsequent cages. If an inverted splice is to be used, the location of the SUPERLATCH shackles and the receiving bands are transposed.

As one cage is lowered over the preceding one, the receiving plate/band is pushed past each latch; the integral spring closing the latch automatically, thereby forming the connection.

## Product Details

Type 7

Type 8

Type 9

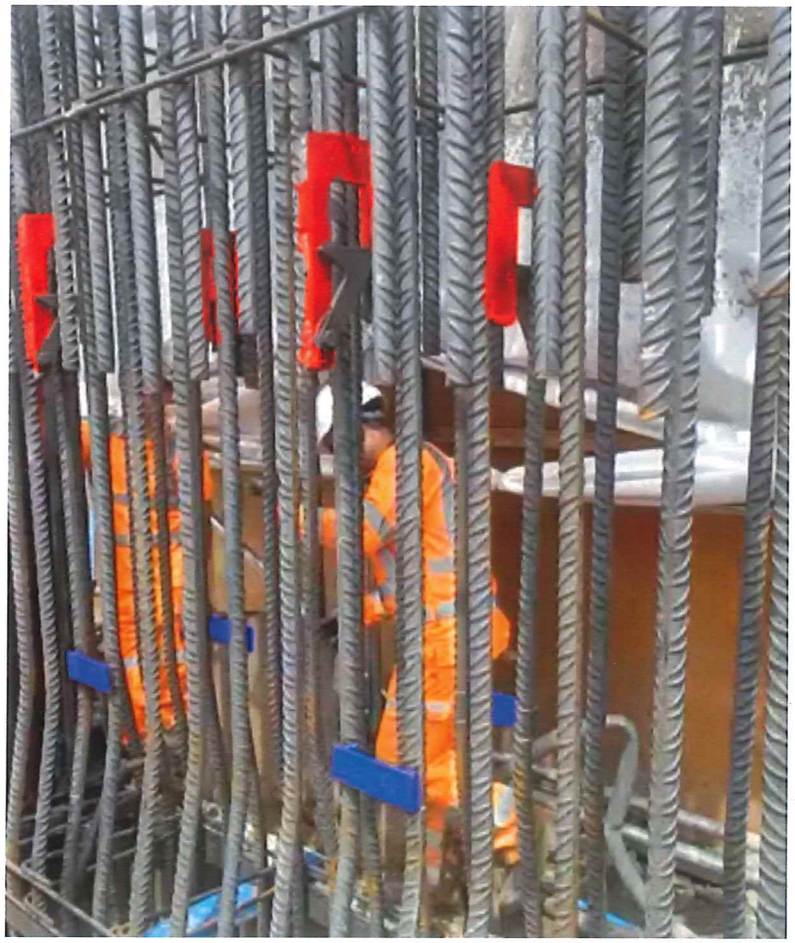
Type 10

| Superlatch® Type | SWL | Compatible Bar Sizes (Ø mm) | Long Leg Length (mm) | Short Leg (Reach) (mm) |
|---|---|---|---|---|
| Type 7 | 1t | 16-25 | 215 | 90 |
| Type 8 | 2t | 25-32 | 275 | 110 |
| Type 9 | 4t | 32-40 | 320 | 125 |
| Type 10 | 6t | 40-50 | 405 | 180 |

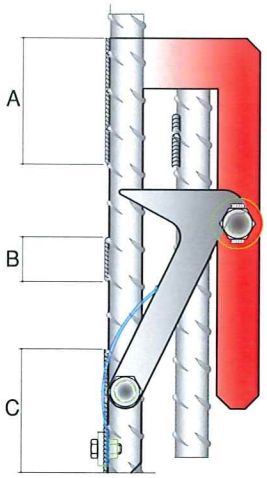
Once the splices have been connected, the completed cage can be suspended on the crane as one piece. In cases where piles are to be fitted with multiple cage sections, each complete cage being suspended off the pile casing prior to concreting, it will be usual to use fewer SUPERLATCH shackles on the lower splices where the suspended weight is less.

The upper splices will require either a larger quantity of the same shackle type or a fewer number of higher capacity shackles.

The sequencing may require some reconsideration in cases where, in the final condition, the cage sections are supported from beneath, off the pile toe.



### Cage to Shackle Fabrication Details - Length of Fillet Welds




| Superlatch Type | Weld A | Weld B | Weld C |
|---|---|---|---|
| Type 7 | 75mm | N/A | 75mm |
| Type 8 | 75mm | N/A | 75mm |
| Type 9 | 75mm | 50mm | 75mm |
| Type 10 | 75mm | 50mm | 75mm |

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## SUPERLATCH® - Release Tool

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