



21055 Telescopic connectors for stairs and landings

Invisible Connections Ltd

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DESCRIPTION

The tradition of post-fixing steel support angles, to support precast stair landings, involves erecting a platform, drilling a large number of holes into the core wall and then using the crane to manoeuvre a heavy steel angle into position before site operatives fix it securely to the wall. This process is repeated at the other end of the landing before the landing and stairs can be installed. The entire process is repeated before each landing can be installed.

Operatives installing stairs and landings are therefore exposed to range of potential hazards such as fall from height, being struck by falling objects, exposure to dust, vibration, noise and trip hazards. The work is very time consuming and physically demanding, increasing the risk of fatigue.

Invisible Connections has developed a system for the installation of precast stairways and landings that significantly reduces these risks based on telescopic connectors.

Telescopic connectors structurally support the landings, off the core walls, without the need for steel support angles. Therefore, drilling is eliminated from the installation process, as is the use of a platform or the manoeuvring of heavy items by the crane (except for the landing itself). Also, no tools or power supply are required.

The connectors are deployed into wall recesses (part of the system of supply) which provide generous fixing tolerance. The connectors and wall recesses are grout-filled by a site operative, working on the top of the flat level landing, where they are harnessed to the core wall, or contained within the edge-protected landing.

The process is much simpler to manage on-site and requires fewer crane operations, improving overall site safety.

Presentations are regularly given to Architects and Structural Engineers to educate them about the safety benefits of the products, highlighting the CDM regulations' emphasis on designing out risk.

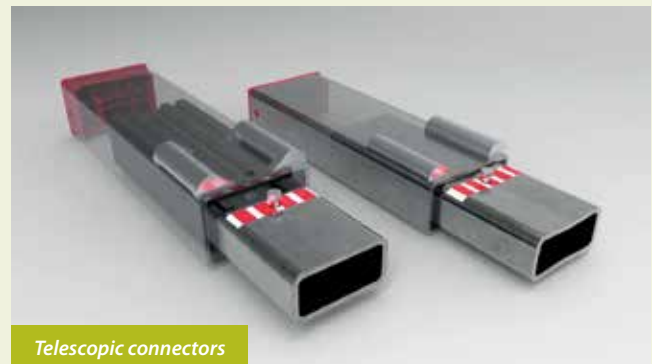
BENEFITS

- Reduced risk of fall from height
- Reduced risk of being struck by falling objects
- Eliminates risk associated with exposure to dust
- Elimination of risks associated with vibration
- Elimination of risks associated with noises
- Installation is much less physically demanding on the site operatives
- The installation process is also significantly de-skilled, resulting in far fewer things able to go wrong

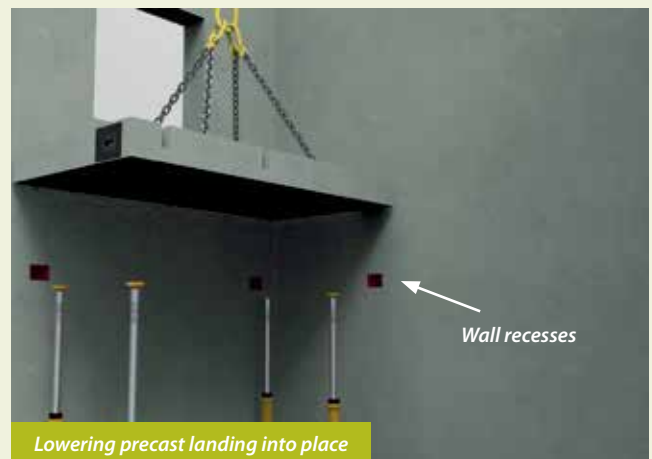
- Landings and stairs take a fraction of the time to install
- Facilitates earlier use of the cores for general access around site
 - This negates the need for using narrow and steep temporary stairs or ladders
- Improved structural safety using telescopic connectors
- Increases the appeal of precast concrete construction.

TRANSFERABILITY AND DEVELOPMENT

- The system can be widely adopted by the construction industry.



Telescopic connectors



Lowering precast landing into place



Lowering staircase into place