



## Case study

### Estadio de Futbol Monterrey, Mexico

**Client:** Club de Futbol Monterrey

**Architects:** Populous & VFO  
(formerly HOK Mexico)

**Project Mangers:** PMP Consultores

**Roofing Contractors:** Metcon del Norte S.A. & Termacero Construcciones Metalicas Prefabricadas

**Kalzip® products:** 55,000m<sup>2</sup> Kalzip® 65/333 x 1.0mm standing seam roof in stucco embossed finish.

**Year:** 2013-15

A prestigious and technically demanding project saw Kalzip® successfully deliver a major contract for the envelope of an iconic new football stadium, working in Mexico for the first time and satisfying the design brief of a world renowned architectural partnership.

Not just the scale of the Estadio de Futbol in Monterrey, but its form – designed to reflect both the region's history and its mountainous scenery – demanded the highest aesthetic and performance standards for the standing seam roof.

With Club de Futbol Monterrey as the client for the massive stadium, Kalzip® in the UK

was assisted in delivering the contract by the department for UK Trade & Investment, as well as its established international network of design and delivery partners.



# SETTING THE BENCHMARK FOR MODERN STADIA



## The challenge

The Stadio de Futbol is one of the largest sports arenas in the region, commissioned by Club de Futbol Monterrey – with the design team being led by two internationally regarded architectural practices: Populous and VFO. In addition to the scale, the concept for the structure presents a very complex, asymmetrical form which was to be constructed within a relatively tight timeframe; requiring careful planning of the erection phases. Furthermore, with no two sections of cladding being identical in size or geometry, this would create an unusually high demand in terms of detailed design work and the preparation of cutting schedules to facilitate fabrication; much of which had to be carried out on site.

Given the climate and location, the stadium is exposed to extremes of weather, including high winds, driving rain and very high temperature cycling; all of which impose demands on the cladding system. As the

design process progressed, there would be multiple technical and logistical challenges to overcome in relation to special interface and weathering details, as well as maintenance access and other considerations to ensure the structure's long term functionality.

The project was tendered under a design and supply model which helped convince the client of Kalzip's ability to respond to the project team's requirements: maximizing the benefits for them in terms of technical support and the capacity to respond to fresh or different market conditions in the international arena.

After Dan Vinet (Kalzip's North American Sales Director) secured the original design contract for the roof the manufacturer involved a number of key colleagues including Alberto Argenti from its European organisation, who was fluent in Spanish, to help liaise with the client and consultants in Mexico.

Christopher Lee, the project designer and Senior Principal at Populous, commented: **“Football is about spectacle and passion, we've located spectators as close to the pitch as possible, creating the most atmospheric modern stadium in Latin America. Certainly Estadio de Futbol with its imposing roof design executed in Kalzip® standing seam will set the new benchmark for modern stadia in Latin America, and will become the iconic destination for Rayados\* fans and the people of Monterrey.”**

\* Rayados is the popular name for CF Monterrey.

**The solution**

As a major manufacturer, active across the continent and beyond, Kalzip® has the experienced personnel as well as the physical resources to interpret client or consultant’s briefs, and deliver bespoke product packages in response. This includes conforming to regional construction codes and other requirements, local to the project, and also manage all necessary logistics such as shipping and import licences so that contracts can run to schedule.

**“Kalzip® has the unique ability to offer architects and designers great freedom and flexibility of design. We offer a range of materials, finishes and shapes – virtually limitless design potential and advanced roll forming techniques that combine proven functionality with stunning aesthetics.”**

**Tony Mills, General Manager, Kalzip UK**

Members of Kalzip’s design team in the UK were closely involved with creating the free-flowing geometry, finessing the design to simplify the fabrication and installation process, without compromising the architectural integrity. This included paying special attention to the hip areas and also designing the distinctive ‘gills’ which punctuate the aluminium envelope. Also manufactured in the UK and shipped to Mexico were bespoke high level and low level aluminium gutters, and prefabricated hip flashings formed in a custom blue colour. In addition Kalzip® shipped out all the aluminium walkways, access hatches and fall arrest systems which were used during the construction and will continue facilitating future maintenance activity.

As part of its contractual responsibilities and commitment to safe working practices wherever it is involved, Kalzip® additionally provided the two Latin American cladding installation companies – Metcon del Norte S.A. and Termacero Construcciones Metalicas Prefabricadas - with two weeks of bespoke

training, employing purpose-built rigs replicating the curved form they were to enclose using the standing seam roof and its many accessories.

In total, Kalzip® shipped more than 40 containers in 16 consignments, setting up its own fabrication yard on site from which to feed adjacent bays of the building. With a team which included a production manager and two fabricators, Kalzip® used the CAD and Revit generated cutting schedules to manufacture batches of material in sequence which were then supplied to the two installation sub-contractors.



