Walmart Chile Inmobiliaria counts on PNA’s patented Thin Concrete Pavement Design

When Walmart Chile Inmobiliaria built a distribution center in Santiago, Chile in 2011, it turned to PNA’s patented Thin Concrete Pavement (TCP) Concrete Pavement technology as a cost-effective replacement for traditional concrete pavement design. The company was so pleased with TCP’s performance, it used TCP twice more: first, when it expanded the distribution center in 2015 and then in 2018, when it built another distribution center in Santiago.

Challenges
Before 2011, the big-box chain used conventional joint spacing and thickness – 9.8 feet (3 m) to 16.4 feet (5 m) long and 8 inches thick (20.3 cm) – in its distribution centers in Chile. This type of pavement design performed poorly because of significant upward curling. This curl – combined with significant truck traffic volumes and loads – resulted in premature transversal cracking.

PNA Solution
In 2011, the retailer chose TCP for its new distribution center in Santiago. By reducing the joint spacing to 8 feet (2.4 m) or less, the TCP system minimizes upward curling and reduces the stresses truck traffic puts on each panel. This design makes it possible to reduce thickness by 2 inches (5 cm) or more, saving up to 30 percent in material costs.
Four years after the distribution center opened, Walmart representatives were so happy with the TCP pavement’s performance, they decided to use TCP technology for an expansion of the original facility. In 2018, the big-box chain built another distribution center in Santiago, choosing TCP as its pavement solution.

TCP is performing better than Walmart’s historic design more than seven years after the retail giant first used it.

TCP cut Walmart’s costs 12 percent

<table>
<thead>
<tr>
<th>Initial Pavement Design</th>
<th>Optimized TCP Design</th>
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</thead>
<tbody>
<tr>
<td>9.5 inches (24 cm) thick with 15-foot (4.6 m) joints</td>
<td>6.7 inches (17 cm) thick with 6-foot (1.8 m) joints</td>
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<tr>
<td>7.9 inches (20 cm) thick with 15-foot (4.6 m) joints</td>
<td>5.9 inches (15 cm) thick with 6-foot (1.8 m) joints</td>
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Walmart was so happy with TCP’s performance compared to outdated concrete pavement designs, it chose TCP for two more pavement projects.