Wall and Slab Formwork Systems: KITSEN Engineered Solutions for High-Rise Construction Showcased at Bauma China



Yangjiang, Guangdong Nov 12, 2026 (Issuewire.com**)** - In high-rise structural engineering, vertical wall formwork and horizontal slab formwork serve distinct yet interdependent operational functions. Wall formwork systems must withstand extreme lateral fresh concrete pressure, preventing structural deflection during high-rate vertical pours. Conversely, slab formwork systems are engineered to facilitate rapid early-stripping sequences, allowing component cycling to upper levels while maintaining structural support. The synchronized integration of these two sub-systems dictates the critical path of the overall floor construction cycle. At bauma China in Shanghai, KITSEN unveiled its integrated wall and slab formwork portfolio, demonstrating a unified monolithic pouring workflow optimized for high-rise residential and commercial buildings.

Leveraging over 31 years of manufacturing expertise and structural engineering, KITSEN evaluates wall and slab formwork performance across four critical engineering metrics:

Lateral Concrete Pressure Resistance: High-capacity load retention, engineered to withstand up to 60 kN/m² on the flagship K100 Wall Formwork System.

Floor Cycle Optimization: Advanced early-stripping mechanics enabling accelerated 5-to-7-day per-floor construction cycles.

System Standardization & Component Efficiency: Minimalized basic component counts that drastically reduce manual assembly overhead for both vertical and horizontal applications.

Perimeter Safety Enclosure: Integrated suspended ringlock system providing total perimeter protection around elevated active working platforms.

Wall Formwork for High Lateral Pressure: K120 & K100 Systems

The vertical formwork product line directly addresses the structural stresses induced by hydrostatic concrete pressure during deep vertical pours. Serving as the heavy-duty modular centerpiece, the K120 System integrates 15 mm AA-grade birch plywood panels, extended tie-rod spacing of up to 1.5 meters, and expansive panel sizes reaching up to 900 x 3000 mm. This design minimizes joint frequency and tie-rod penetrations, enabling high-efficiency erection and dismantling yields of 90 to 110 m² per worker-day. Complementing the heavy-duty line, the K100 System offers a lightweight, highly adaptable alternative. Weighing an average of just 23 kg/m² and featuring articulated fixed and hinged corners, it excels in complex core wall geometries, varied column dimensions, and constrained vertical shafts.

Both structural systems are engineered for maximum safe working loads of up to 60 kN/m², guaranteeing zero-deflection performance under full hydrostatic concrete pressure during continuous shear wall and core wall placements. Exceptional component reusability maximizes project return on investment across high-rise developments: high-strength 6061-T6 structural aluminum frames endure up to more than 300 time cycles, while high-grade plywood panels can be inverted and reused up to 40-60 times. In addition, the system consistently yields architectural fair-faced concrete surfaces, eliminating secondary plastering costs across all floor levels.

Slab Formwork for Fast Floor Cycles: Speedeck & Fastform

The horizontal formwork line governs the critical path velocity in high-rise floor construction. The Speedeck System utilizes an intuitive four-component design (panel, drophead, main beam, adjustable prop) with a maximum individual panel weight of 15.33 kg, allowing crane-independent manual handling by a single operative. To optimize jobsite durability and maintenance, main beams are protective powder-coated, while prop-head interfaces feature protective housings that prevent concrete splatter adhesion. Achieving an expansive coverage area of up to 3.45 m² per prop, Speedeck minimizes prop density, unlocking spacious, unobstructed lower-deck clearance for interior trades and material distribution.

Operating as a complementary horizontal system, the Fastform modular decking solution is engineered for large-span floor plates with drop-beam or flat-slab structural configurations across variable floor heights. Consisting of lightweight extruded aluminum frames faced with 10 mm birch plywood, supplemented by intermediate filler beams, structural trusses, and locking pins, the system supports heavy slab thickness up to 300 mm. Anchored by a 6-direction drophead locking mechanism, Fastform achieves exceptional erection productivity of 80–120 m² per worker-day and stripping rates of 120–160 m² per worker-day. Together, these advanced early-stripping slab solutions empower general contractors to sustain rapid 5-to-7-day structural floor cycles while dramatically reducing site labor costs

and equipment inventory overhead.

Combined Pouring for High-Rise Structures

For high-rise and supertall towers, KITSEN's Protective Suspended Ringlock Scaffolding system completes the structural integration and site safety architecture. Purpose-engineered for multi-story elevated deck casting, this modular system features a continuous steel-mesh perimeter enclosure and rigid ringlock node connections capable of resisting severe high-altitude wind shear. Anchoring directly to cured concrete columns and floor slabs, it establishes a fully enclosed, flame-retardant safety envelope that self-climbs in direct synchronization with vertical wall progress, ensuring uncompromised fall protection and seamless trade access at high elevations.

Jobsite Implementation: Coordinated Wall and Decking Formwork Applications

To validate these mechanical parameters under live jobsite conditions, KITSEN deploys fully integrated wall and slab formwork packages across multi-story commercial and residential developments globally:

• High-Rise Shear Wall and Slab Pours: On standard multi-story developments, contractors pair the K100 vertical wall system with Fastform early-stripping drophead decking. While K100 securely resists lateral fluid pressure within its 60 kN/m² structural design envelope, the early-stripping drophead mechanics allow deck panels and secondary beams to be struck and advanced to the upper level while principal load-bearing shoring props remain undisturbed, reliably maintaining 5-to-7-day floor cycles.

• Crane-Independent Floor Shoring: On dense urban jobsites facing tower crane capacity bottlenecks, combining Speedeck (featuring ultra-lightweight panels under 15.33 kg) with modular wall framing allows small crews to execute manual horizontal stripping and vertical re-erection without heavy lifting equipment, guaranteeing continuous operational progress.

Comprehensive field performance records and jobsite case studies are documented in the KITSEN wall and decking formwork projects portfolio.

Coordinated Wall and Slab vs Fragmented System Selection

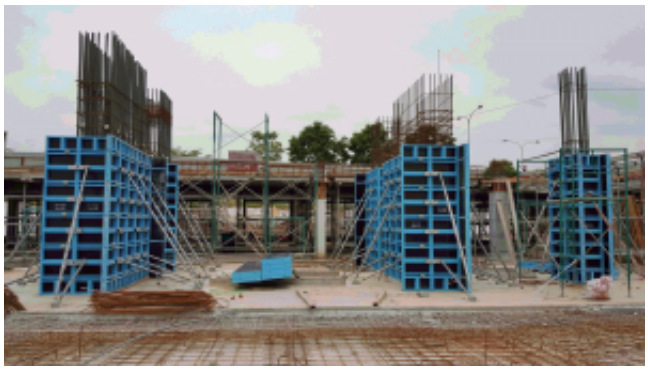
Procuring fully integrated vertical and horizontal formwork systems from a single engineering manufacturer ensures exact technical synchronization between lateral pressure limits, early-stripping drophead kinetics, and modular component dimensions. This unified approach dramatically accelerates cycle times compared to fragmented, multi-vendor sourcing, which frequently introduces system incompatibilities, misaligned connection hardware, and site productivity losses. When wall panels, slab dropheads, and perimeter safety scaffolding share unified engineering design criteria and quality assurance protocols, high-rise structural execution proceeds as an optimized, continuous industrial process.

Conclusion

Wall formwork engineered for 60 kN/m² hydrostatic pressure, slab decking delivering 5-to-7-day floor cycles, and perimeter suspended scaffolding providing total high-altitude safety form the core pillars of KITSEN's high-rise construction solution. The K100 wall system, together with the Speedeck and Fastform decking systems, was showcased at Bauma China as a fully synchronized engineering ecosystem for modern high-rise developments. For structural contractors, this combined technology delivers the ultimate balance of structural load capacity, cycle speed, and site safety. Proven across

major international high-rise projects—from deep basement basemat structures to superstructure roof slabs—KITSEN provides the field-tested performance that backed its showcase at Bauma China.

For more technical specifications and engineering data on KITSEN's wall and slab formwork systems, please visit the official company website: https://www.kitsen.com/. Specific technical inquiries and project designs can be requested directly via the KITSEN engineering sales team.





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