

STEEL HOMES

The future of housing

Bangladesh occupies a unique but challenging geographical position. As a nation sitting atop major fault lines and facing the annual wrath of cyclones and rising temperatures, the traditional approach to housing is being forced to evolve. In this landscape, KY Two Tone's Light Gauge Steel (LGS) structural system has emerged not just as a construction alternative but as a sophisticated engineering solution.

SEISMIC RESILIENCE

Bangladesh lies in a moderate to high seismic risk zone. Traditional Reinforced Cement Concrete (RCC) structures are heavy and brittle, during an earthquake, their mass attracts immense inertial forces, often leading to sudden, catastrophic failure. KY Two Tone's LGS system flips this logic. By utilising high-strength, cold-rolled steel, these structures boast a high strength-to-weight ratio. Being significantly lighter than concrete, they attract far lower seismic forces. The LGS frames are engineered to flex and dissipate energy without collapsing.



MULTI-LAYERED SHIELD AGAINST FIRE

Fire safety is a non-negotiable priority in modern residential design. KY Two Tone employs a "defence-in-depth" strategy to protect lives and property. The interior walls are lined with fibre cement boards, while exteriors feature 0.5mm steel siding. These materials act as primary thermal barriers.

DEFYING CYCLONES AND HUMIDITY

KY Two Tone structures are designed to withstand wind gusts of up to 180-210 km/h,

adhering to the BNBC's regional wind speed requirements. This makes them significantly safer than traditional semi-permanent structures during cyclone seasons. KY Two Tone utilises Galvanised or Galvalume-coated steel. This layer of Zinc and Aluminum provides a robust shield against corrosion.

PRECISION MANUFACTURING

In conventional construction, safety is often compromised by on-site improvisation, poor mixing of materials, or lack of oversight. KY Two Tone shifts the majority of the construction process into a

controlled factory environment. To maintain digital Accuracy 70 per cent of the manufacturing is handled by computerised roll-forming machines.

THERMAL SAFETY AND INDOOR COMFORT

Bangladesh's extreme heat can make traditional brick homes feel like ovens. KY Two Tone addresses this through a high-performance "layered shield" of reflective steel siding, bubble insulation, and internal glass wool. This system offers superior thermal resistance compared to high-thermal-mass bricks.

A SAFER ENVIRONMENT

Safety is also about the future of our environment. Traditional brick kilns are a major source of CO2 emissions and topsoil degradation in Bangladesh. KY Two Tone's dry construction method:

- Saves thousands of litres of water usually required for concrete curing.
- Reduces material waste to nearly zero through precise factory cutting.
- Utilises 100 per cent recyclable materials, ensuring that the building's lifecycle has a minimal impact on the nation's ecological health.

While market scepticism toward steel housing existed in the past, the period of 2024–2025 has seen a massive shift in perception. Homeowners now recognise that the speed of construction (1-2 months for single-story homes) does not come at the cost of safety, but rather through the efficiency of engineering.



Landowner's guide to safety and quality control

ADRIN SARWAR

Building a home requires more than just hiring a contractor. Landowners need to monitor these things for ensuring the safety and longevity of their investment.

Structural Steel (Rod) Quality

• Ensure the use of Grade 500W (72.5 TMT) or Grade 400 (60-grade) rebars. Grade 500W is preferred for modern high-rises.

- Verify that the diameter (e.g., 10mm, 12mm, 16mm, 20mm, or 25mm) matches the structural engineer's drawing exactly.
- Rods should be free of heavy rust or scales.

Cement & Concrete Mix

• Use OPC (Ordinary Portland Cement) for columns and beams for faster strength gain, and PCC (Portland Composite Cement) for plastering and walls.

- Look for the BSTI seal on bags.

Check the manufacturing date (cement loses strength after 3 months).

• For standard RCC (Reinforced Cement Concrete), a common ratio is 1:1.5:3 (Cement:Sand:Stone chips).

• Use crushed stone chips for columns and foundations for higher load-bearing capacity.

Earthquake Resilience (Seismic Safety)

• Ensure "Stirrups" (the rings holding the main rods) are spaced closely near joints and have 135-degree hooks to prevent the column from bursting during a quake.

- Verify the depth matches the Soil Test Report.

Fire Safety Measures

• Buildings over a certain height must have two exit points. Check if the stairwell width meets the code (min 1.1m to 1.5m depending on building type).

- Ensure high-quality FRLS (Flame

Retardant Low Smoke) cables are used to prevent toxic smoke during a fire.

• If building a high-rise (above 7 stories), fire-rated doors are mandatory for stairwells.

• Plumbing & Damp Proofing

• Ensure a DPC (Damp Proof Course) layer is applied at the plinth level to stop moisture from rising into the walls.

• Ensure sewage pipes have a minimum 1:80 slope to prevent clogs.

Documentation & Verification

• Ask the company for a steel tension test report from BUET or PCSIR for the specific batch of rods delivered.

• During casting the contractor should take samples to a lab to test "Crushing Strength" after 7 and 28 days.

• Ensure the construction matches the RAJUK (Dhaka), CDA (Chittagong), or Pourashava approved plan to avoid future demolition orders.

Demand rising for high-quality electrical cables

The country's economic transformation is driven by growth in power generation and distribution. Alongside the demand for electrical cables is rising too; it is yet to reach saturation. Despite the presence of numerous manufacturers in the market, the need for reliable, high-quality cables remains critical.

Tackling incidents of fire

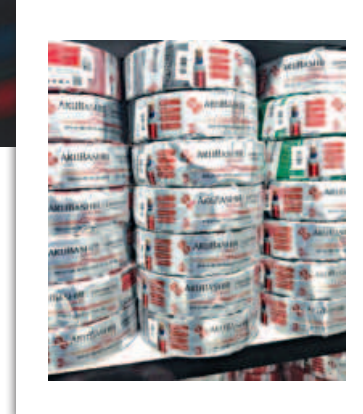
Lately, electrical safety has become a major concern in Bangladesh, particularly in urban and industrial areas. Approximately 39 per cent of fire incidents are caused by electrical reasons. The primary reasons include the use of low-quality cables, faulty circuit breakers, substandard switches and sockets, unsafe multi-plugs, and projects executed without proper technical supervision. When circuit breakers fail to operate effectively, excessive electrical loads can cause cables to overheat. This significantly increases the risk of fire. In industrial facilities, installation of excessive electrical equipment combined with inferior cabling is a leading cause of electrical accidents.

Ensuring building and workplace safety, therefore, requires careful cable selection. Recognising these challenges, AkijBashir Cables has introduced a triple-layer cable, designed to withstand temperatures of up to 105°C. This innovation offers protection against overheating and fire hazards.

Meeting quality standards

AkijBashir Cables follows both international and local standards throughout its manufacturing process. The company offers a comprehensive product portfolio that includes domestic cables, low-voltage and XLPE low-voltage cables, medium voltage cables, fire survival cables, communication cables, instrumentation and control cables, aluminium domestic and power cables, LSZH (Low Smoke Zero Halogen) cables, coaxial cables, flexible cords, service drop cables, copper strips and bus bars. The company is capable of manufacturing cables with ratings of up to 33 kV.

AkijBashir Cables operates a state-of-the-art in-house testing laboratory. All products are manufactured using 99.99



per cent pure copper and aluminium, combined with premium grade PVC and XLPE insulation materials. The company's current annual production capacity stands at 3,600 metric tonnes of copper and 2,400 metric tonnes of aluminium.