

# Sonia Sweaters Ltd. (9932)

604, Kondolbagh Taibpur, Ashulia Road, Savar

28.April.2014



## Identified Priority 1 Concerns

Main building –

The number of re-bars in columns does not match the construction documentation; loading to be reduced to allowable stress levels.



## 1<sup>st</sup> Priority 1 – Major concern

Built in 2002 with stone chip concrete

Columns do not reflect information provided on structural drawings which indicated 500mm x760mm with 32 number 25mm dia re-bars.

We surveyed 500 mm x 760mm columns. Two columns were Ferro-scanned and showed 20 bars which is less than the amount of rebar shown on the construction documents.

Loading on typical column reflects approx 2.0kPa, expect for 1 floor of storage. For certain gridlines, we found that there was ponctual heavy stacking of fabric.

The Managing Director was advised at the closing meeting to not store any material on the floors. Further action is required to reduce stress (Action section)

## Identified Priority 2 Concerns

Punching shear concern for 8” thick flat slab with storage.



## 1<sup>st</sup> Priority 2 Concern

Taking in account low concrete resistance, we have reasonable doubt that an 8in. flat slab system may have adequate strength for storage loading, especially in unbalanced loading situations where concrete stress is amplified.

## Identified Priority 3 Concerns

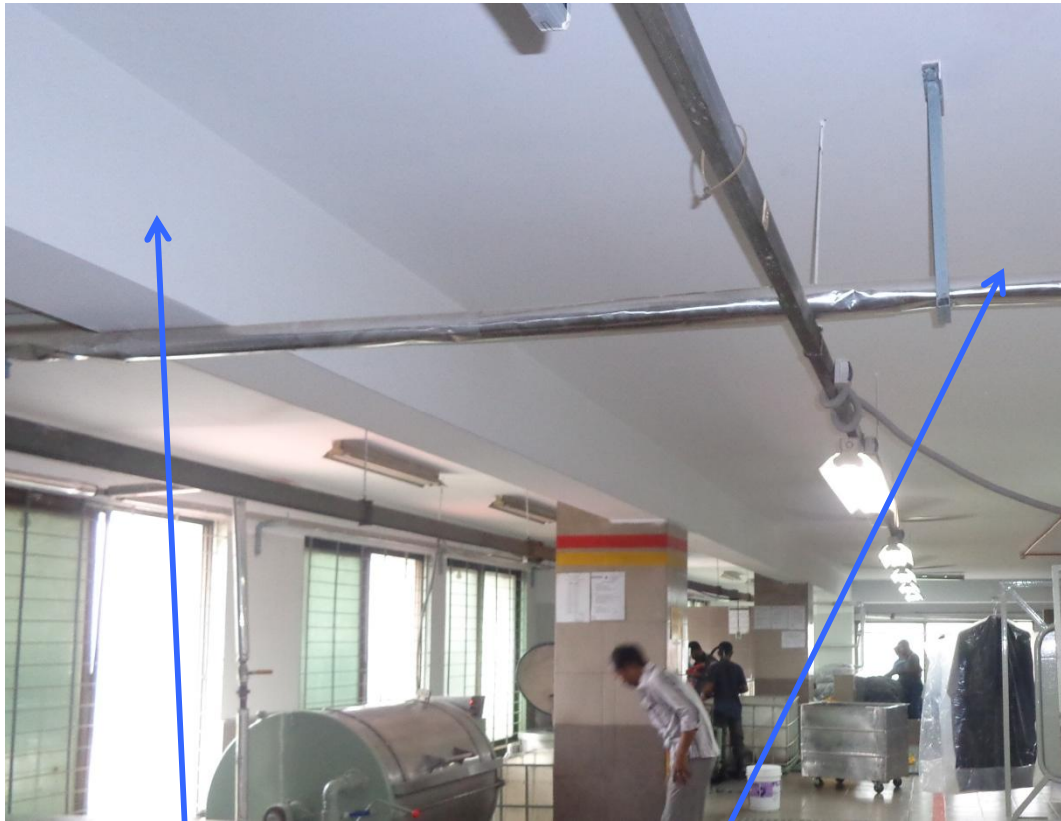
No waterproofing at roof level



### 1<sup>st</sup> Priority 3 concern

No waterproofing membrane was visible on the roof of the building. This means that any cracks in the surface finishes on the roof will allow water to seep into the concrete slab beneath the finishes, and cause long-term soaking of the slab. The same applies to all water tanks at roof level.

# Overall Stability System



Typical  
Continuous  
Beams All-Around

Ground to 4th Floor – Interior bays have continuous beams in all directions  
4th Floor and Above – Interior bays have a flat slab system only.

Sway stability of building could only probably be expected from rigid frame system (beam and column connections) found at the periphery of the building although no ductile detailing is provided on the structural plans. Furthermore, with columns overstressed in compression, they have no reserve for moment frame use. Masonry infill panels are unrestrained and cannot be considered.

We require that these items be investigated as part of a Detailed Engineering Assessment

# Priority Actions

## Problems Observed Summary

**ITEM 1:** Concrete stress due to current loading is greater than allowed.

**ITEM 2:** Punching shear concern for 8” flat slab with storage.

**ITEM 3:** No waterproofing at roof level.

## Item 1 and actions

Concrete stress due to current loading is greater than allowed.

### Priority 1 (Immediate – Now)

- Verify in-situ stress and material properties by testing 100mm dia. concrete cores of at least 4 columns.
- Commence Detailed Engineering Assessment.

### Priority 2 (within 6 – weeks)

- Act upon all of the recommendations of the DEA.

### Priority 3 (within 6-months)

- Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.

## Item 2 and actions

Punching shear concern for 8" flat slab with storage

**Priority 1  
(Immediate – Now)**

- None

**Priority 2  
(within 6 – weeks)**

- Include punching shear verification with updated concrete strength information in the Detailed Engineering Assessment.

**Priority 3  
(within 6-months)**

- None

## Item 3 and actions

No waterproofing at roof

**Priority 1  
(Immediate – Now)**

- None

**Priority 2  
(within 6 – weeks)**

- None

**Priority 3  
(within 6-months)**

- Apply a new waterproofing membrane at roof level.