CONSOLIS
BUILDING

# East European Focus

## Hungary & Romania

Bogdan Bulgaria / 28.05.2016

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# ASA Hungary – ASA CONS Romania - Overview


## Design & optimization

- Compehensive solutions
- 3D modelling

## Prefabrication

- 40 years expertise
- ~40,000 m3 p.a. in Hungary
- ~50,000 m3 p.a. in Romania

## Assembly

- 3 in-house teams in Hungary
- 2 in-house teams in Romania
- Safety mindset

## Industrial floor

- High-end surface precision
- ~300,000 m2 p.a.

## General contracting

- Outstanding references
- Strong project management

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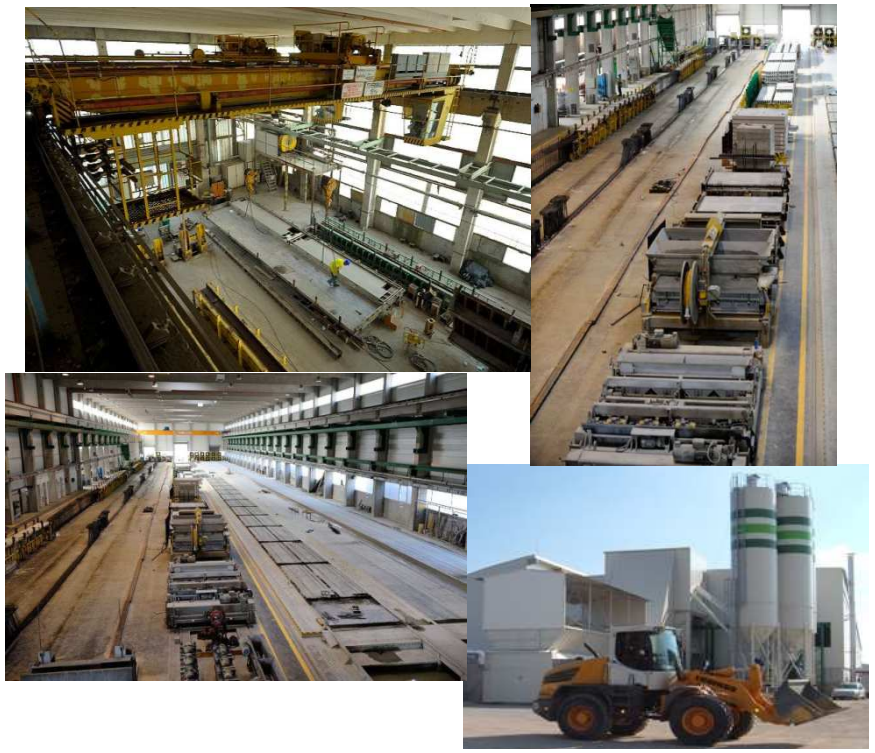
# 1. Post-Comunism Take-off of Precast Business - Hungary

**1999**

**2015**



**ASA Építőipari Kft** was founded in 1990 by the technical staff and on the premises of the former national construction company no. 31. The know-how, the experience, the technical production possibilities were improved and developped considerably during the last decades, yet the same unalterable focus on **innovation and quality** remains the main trademark of ASA Építőipari Kft.

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# 1. Post-Comunism Take-off of Precast Business - Romania

**1999** **2015**

- In 1989, after the revolution against Communism, the whole concrete precast structure market felt into disgrace, mainly because of the political instability, population misconception against communist block of flats (mainly built on precast elements) and lack of foreign investments.
- Most part of the precast factories have reduced their production and closed their doors. The same happened with IMC, the former ASA CONS production unit, which in 1998 became insolvent.
- The change in this area occurred in the late 90's, after with the infusion of foreign capital made especially by the big chains of stores as Metro, Selgros, Cora, Praktiker, Rewe, Kaufland commercial centers, immediately followed by industrial buildings.
- Based on this investments, the demand for precast and pre-stressed concrete elements was felt again in the market .
- ***ASA CONS ROMANIA*** was established in 1999, as part of the group **ASA Epitoipari Kft** (founded in 1990 in Hungary), and from July 2008 both are part of the **Consolis** Group.

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# 1. 2008 – CONSOLIS acquired ASA Group



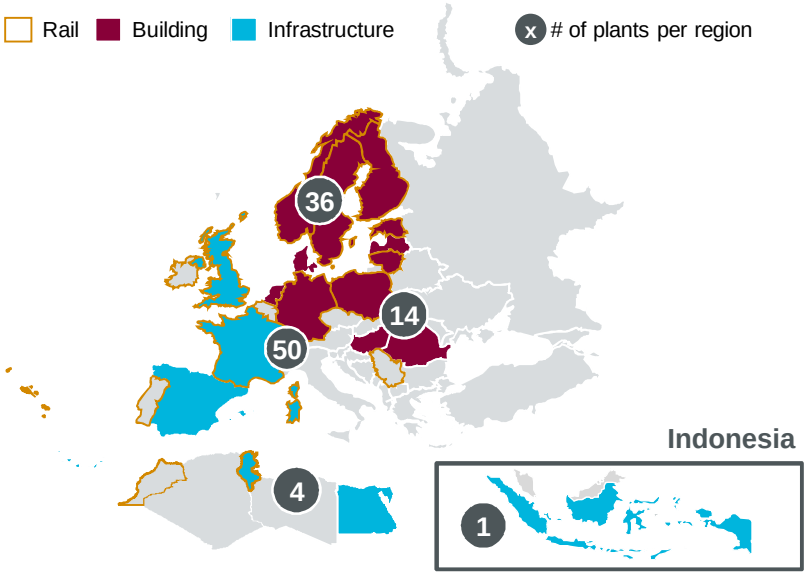



## Group Overview

| | |
|---|---|
| 1,3 bn € | Sales 2015 |
| 75 mn € | EBITDA 2015 |
| 9 | Major countries 80% sales |
| 20 | Countries 20% sales |
| 10 000 | Employees |

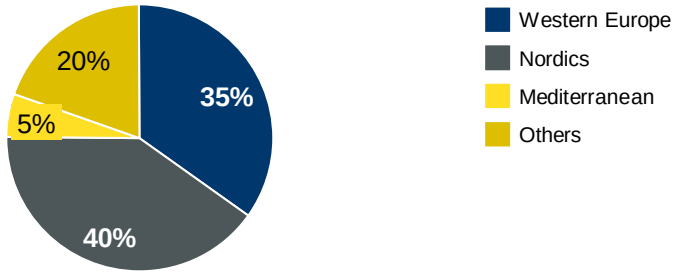
| 3 market segments | Net sales % of total sales 2015 |
|---|---|
| Building | 60% |
| Infrastructure | 25% |
| Rail | 15% |

## Industrial footprint




For countries where Consolis has both building and infrastructure operations, coloring indicates the primary business line

**Net sales by region**
% of total sales, 2015



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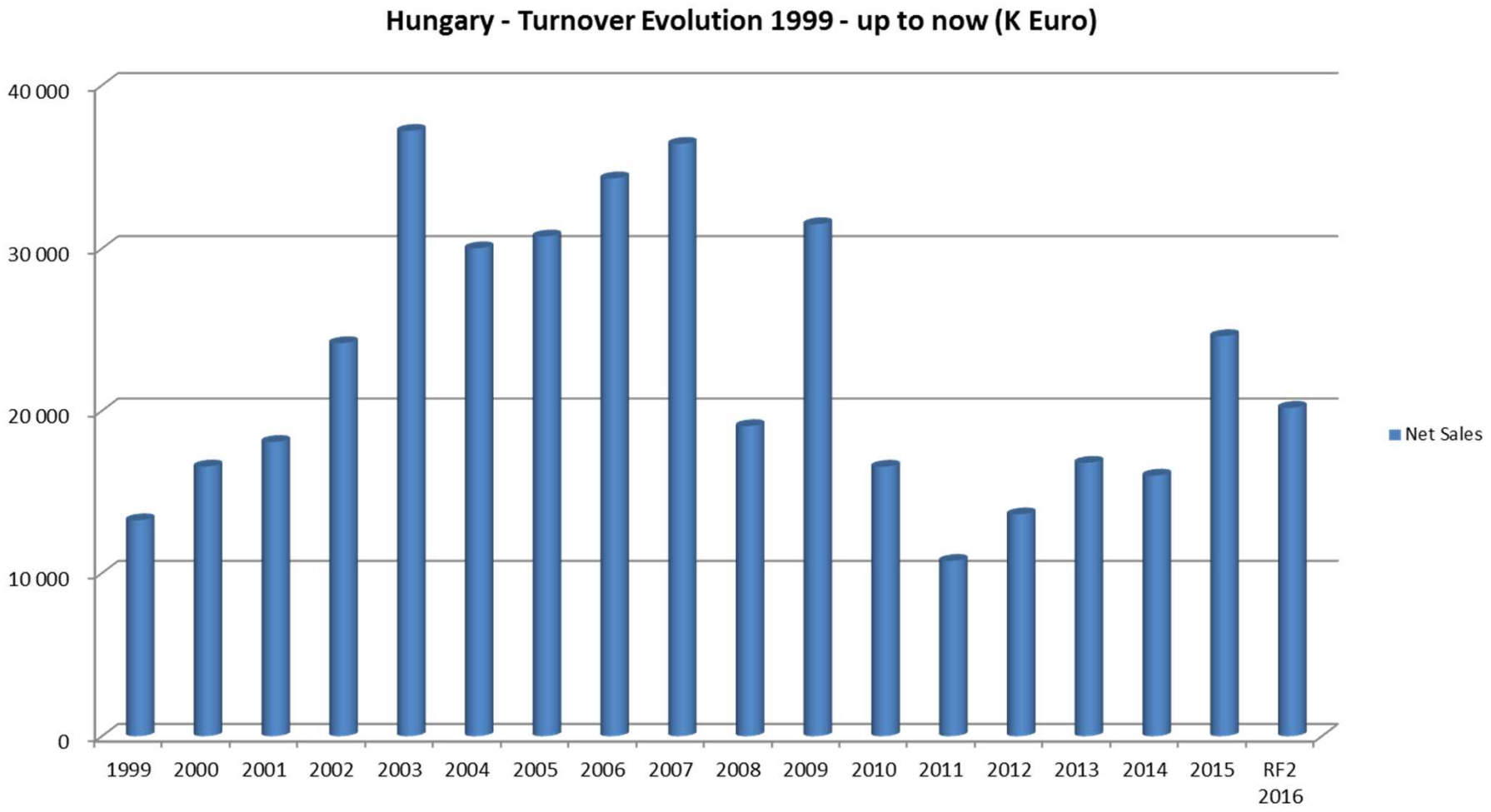
# 1. EE markets – immature & unbalanced



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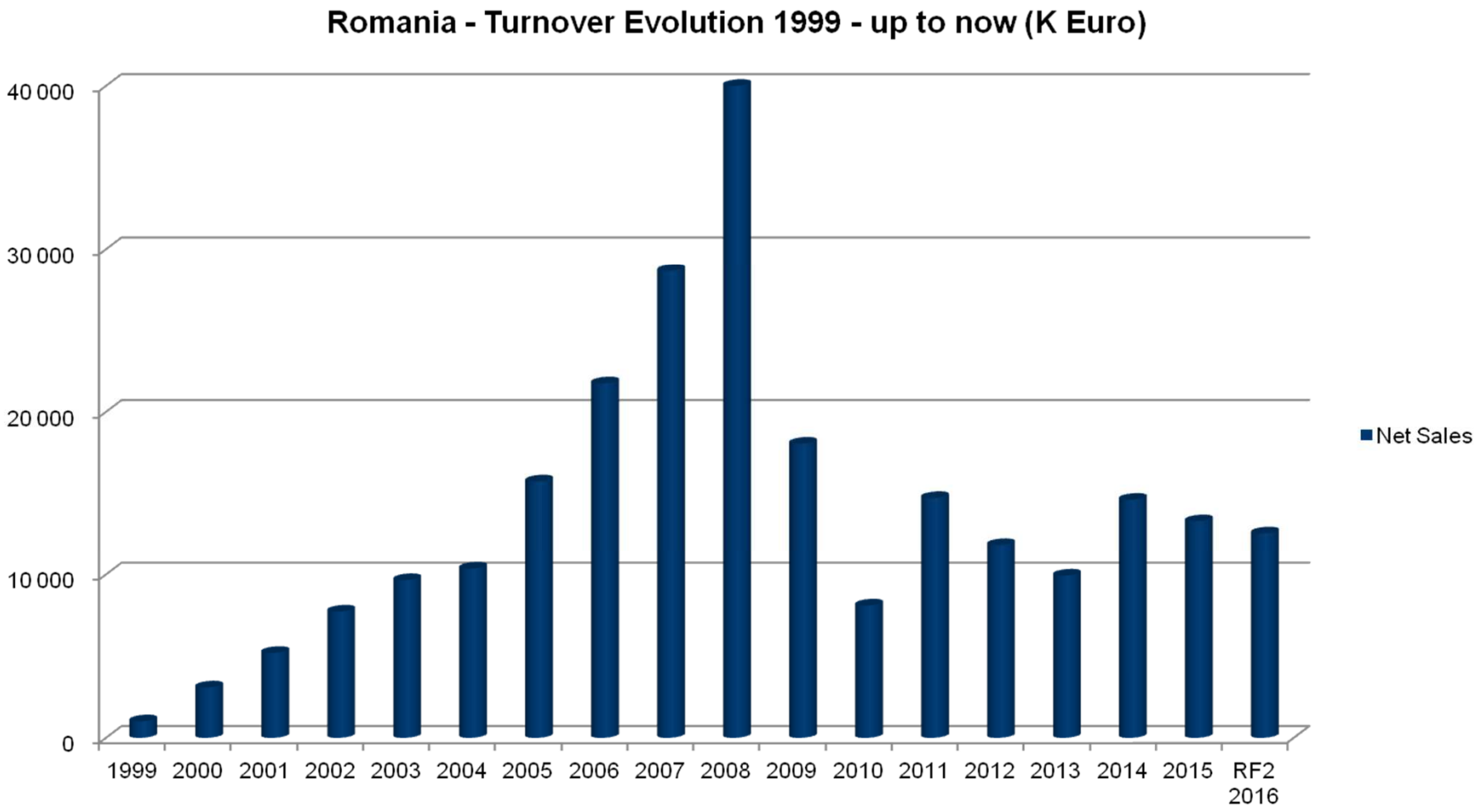
# 1. EE markets – immature & unbalanced



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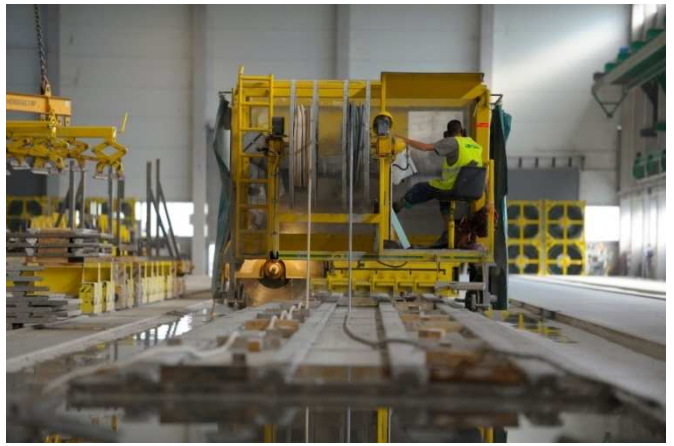
## 2. Hungary – HC production

- *Casting technology: Elematic slipformer*
- *3 lines of 120 m / 2,40 m wide*
- *Product types:*
  - *HCS 185*
  - *HCS 200*
  - *HCS 250*
  - *HCS 300*
  - *– Upper-ribbed*
    - *55+55 => 65+135*



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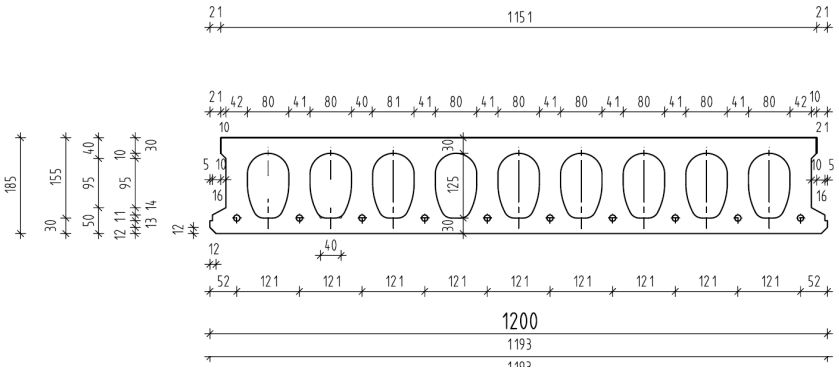
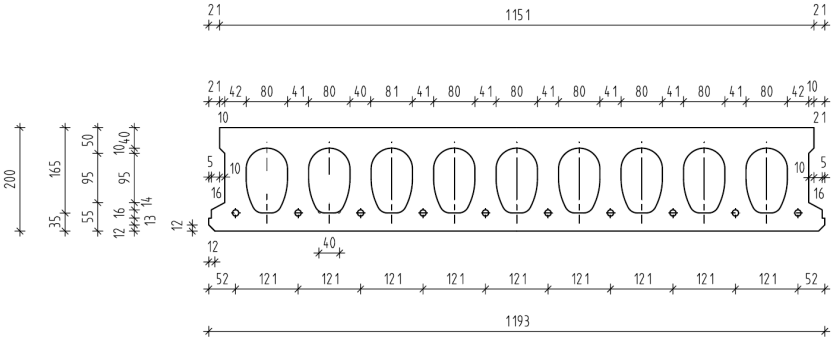
# 2. Hungary – HC production

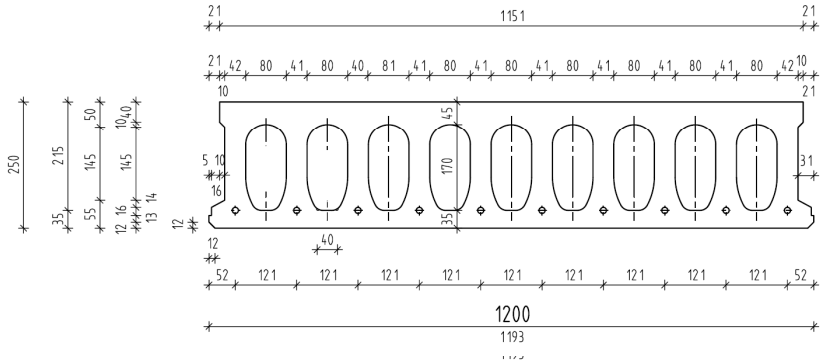
HCS185-1,20



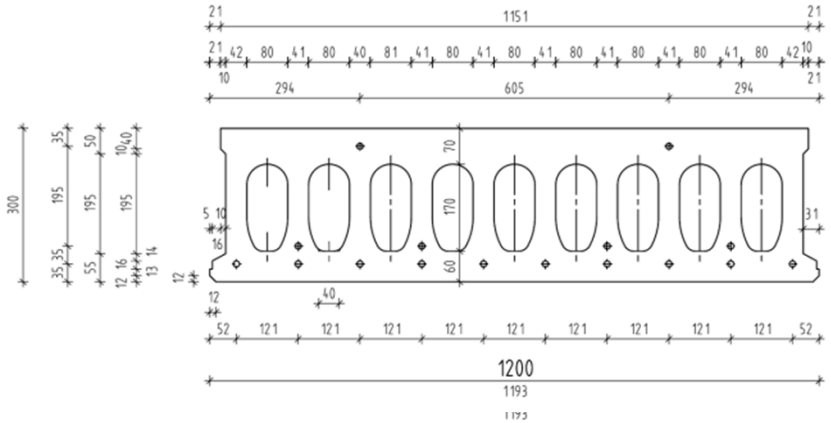

HCS200-1,20




HCS250-1,20




HCS300-1,20



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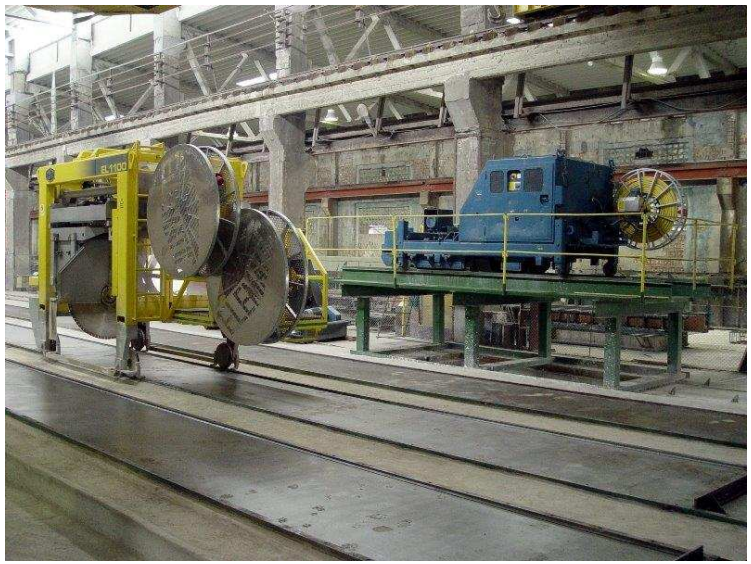
# 2. Romania – HC production

## *Production technology / facility / capacity*



- *Extruded Concrete Technology*
- *three production beds x 80m long*
- *max 280 sqm / day production capacity ➔ 71.500 sqm / year*
- *cut to requested length according to designer's needs.*
- *C50/60 concrete quality, reinforced exclusively with strands, according to design calculation*
- *Technology for two section type castings, FGP 200 and FGP 320*
- *Can be used for both industrial and residential slabs*

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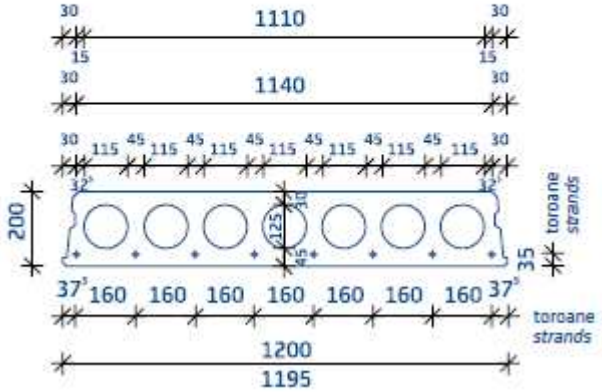
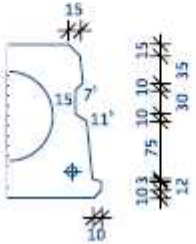
## 2. Romania – HC production

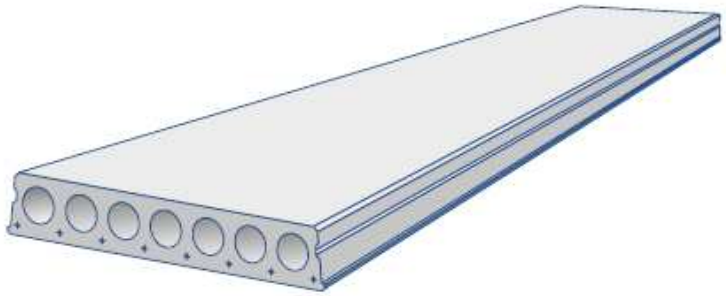
### *Hollow core slabs 200 mm - FGP 200*

Secțiune caracteristică / *Specific section*




| H (mm) | l (mm) | TIP | | |
|---|---|---|---|---|
| | | Cod produs | Număr toroane | Diametru toron (mm) |
| 200 | 1200 | FGP-200/A | 6 | 9.3 |
| | | FGP-200/B | 8 | |
| | | FGP-200/C | 6 | 12.9 |
| | | FGP-200/D | 8 | |



- *Manufactured with extruded concrete technology, on 90 m continuous tracks, with cut-to-length according to designer's requests*
- *Using C50/60 concrete class, reinforced exclusively with strands according to a design calculation.*

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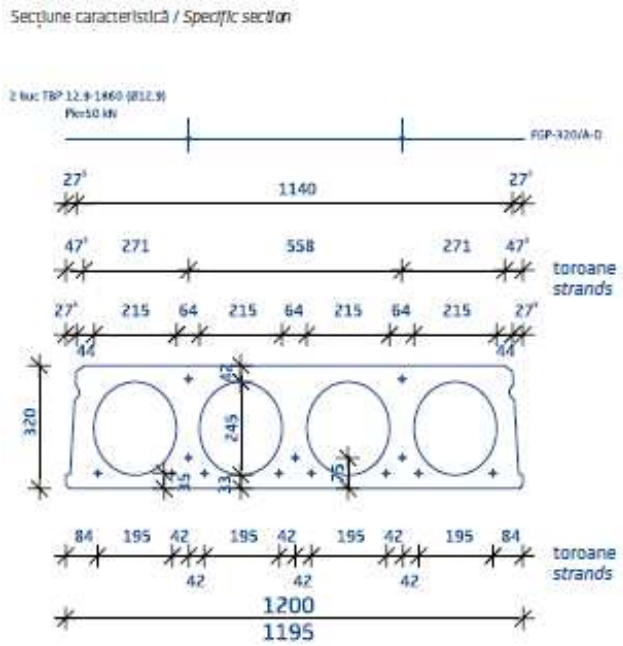
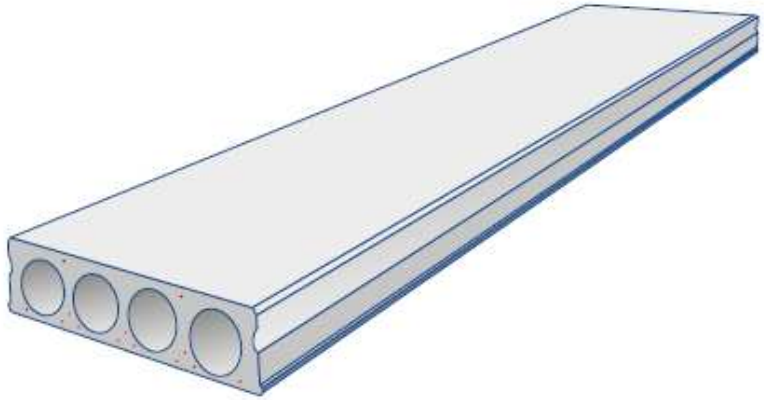
# 2. Romania – HC production

## *Hollow core slabs 320 mm - FGP 320*



- *Executed with extruded concrete technology, on 90 m continuous tracks, with cut-to-length according to designer's needs.*
- *Using C50/60 concrete class reinforced exclusively with strands according to a design calculation.*

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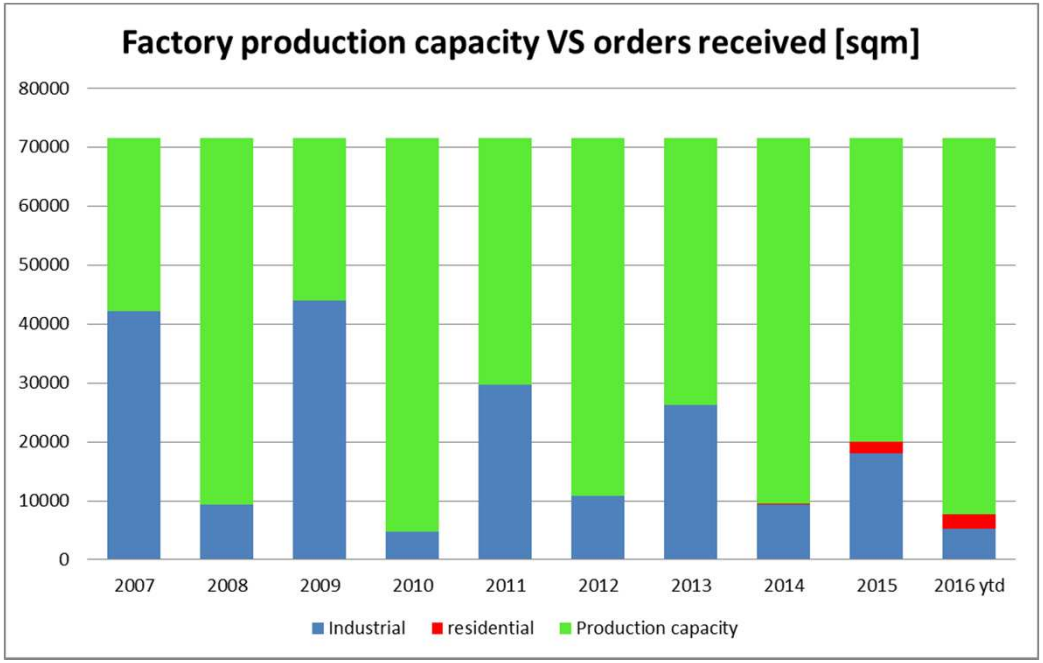
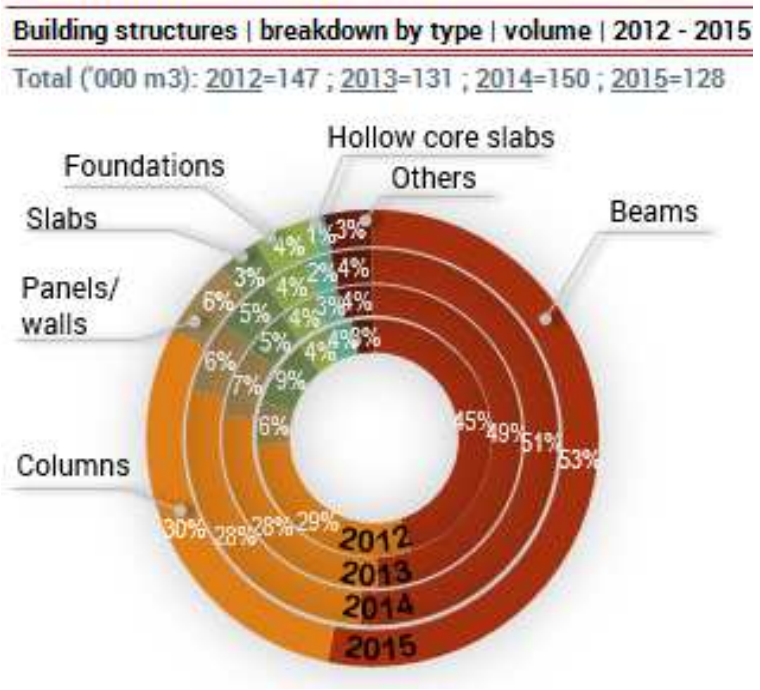
# 3. Romania – HC indicators : loading vs. production capacity, market analysis

ASA Cons Romania – HC production statistics




Market analysis made by specialized company




➔ *Years with Volumes > 50 % of plant production capacity were influenced by one-off big yearly impact project (big shopping centers)*

➔ *2014, the 1-st delivery for the Construction Residential Segment*

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## 4. Precast & HC perception in EE – Hungary - „Life under 60 sqm.”

- Condominium housing construction boomed since 1960 for 30 years
- Cheap and quick solution for standardised living and tackling the demographic pressure
- Technology imported from Soviet Union, later Danish Larsen-Nielsen technology used
- In Hungary ~ 800.000 condominiums are housing 1/5 of the population

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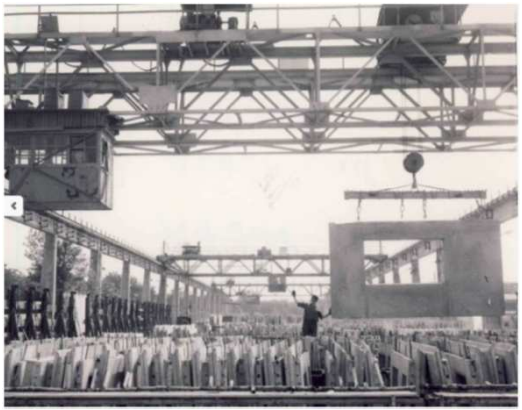
# 4. Precast & HC perception in EE - Romania

Precast Factories in Communism period



➔Before 90's, precast concrete elements were used only for residential segment, blocks of flats with several floors (4 → 10)

➔Quality was very poor, living comfort also

➔People living their own private houses were also obliged to commute to blocks of flats, houses being demolished for living space for building new blocks of flats

➔Conclusion : precast is perceived as related to communism, bad quality, not acceptable for living spaces

➔After 90's, precast solutions were used only for industrial buildings and infrastructure

➔Question : **when the mentality of the people will change and precast solutions will be accepted again for residential projects ???**

End product

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# 4. Precast & HC perception in EE – only non-residential use of HC in Hungary

Pictures of actual Precast Factories stockyards

Industrial Projects

Usage : industrial building projects (non-residential)

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# 4. Precast & HC perception in EE – only non-residential use of HC in Romania

Pictures of actual Precast Factories stockyards

Industrial Projects

Usage : industrial building projects (non-residential)

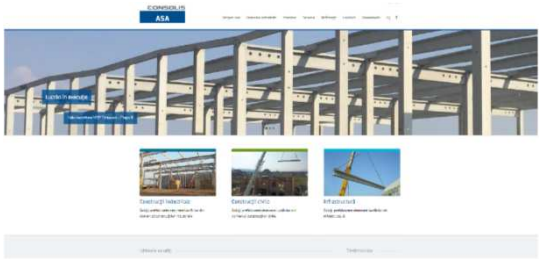
# 5. Actions to promote Precast & HC for residential

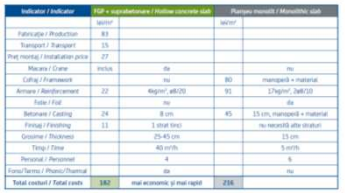
For uninformed people, hollow core elements are perceived as:

- old communist solution
- heavy elements
- poor thermo insulation & acoustic properties
- bad quality
- poor seismic properties
- expensive
- risky

We are actively promoting hollow core elements solution through:

- all media channels
- advertising and interviews in construction speciality magazines
- ***benchmarking studies***
- own brochures
- company site
- Facebook
- YouTube
- Linked-in



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# 5. Actions to promote Precast & HC for residential

Concrete Slab Benchmarking Romania (Precast vs. Cast in Situ) – included in all our brochures and catalogues

| Indicator / *Indicator* | FGP + suprabetonare / *Hollow concrete slab* | | Planșeu monolit / *Monolithic slab* | |
|---|---|---|---|---|
| | lei/m² | | lei/m² | |
| Fabricație / *Production* | 83 | | | |
| Transport / *Transport* | 15 | | | |
| Preț montaj / *Installation price* | 27 | | | |
| Macara / *Crane* | inclus | da | | nu |
| Cofraj / *Framework* | | nu | 80 | manoperă + material |
| Armare / *Reinforcement* | 22 | 4kg/m², ø8/20 | 91 | 17kg/m², 2ø8/10 |
| Folie / *Foil* | | nu | | da |
| Betonare / *Casting* | 24 | 8 cm | 45 | 15 cm, manoperă + material |
| Finisaj / *Finishing* | 11 | 1 strat tinci | | nu necesită alte straturi |
| Grosime / *Thickness* | | 25-45 cm | | 15 cm |
| Timp / *Time* | | 40 m²/h | | 5 m²/h |
| Personal / *Personnel* | | 4 | | 6 |
| Fono/Termo / *Phonic/Thermal* | | da | | nu |
| **Total costuri / *Total costs*** | **182** | mai economic și mai rapid | **216** | |

**HC (incl. concrete topping) : 40,45 Euro / sqm (2 days execution)**

**Cast in Situ slab : 48 Euro / sqm (30 days execution)**

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## 5. Actions to promote Precast & HC for residential

1-st step - 2014 → first residential project with HC slab elements, Sibiu, Romania

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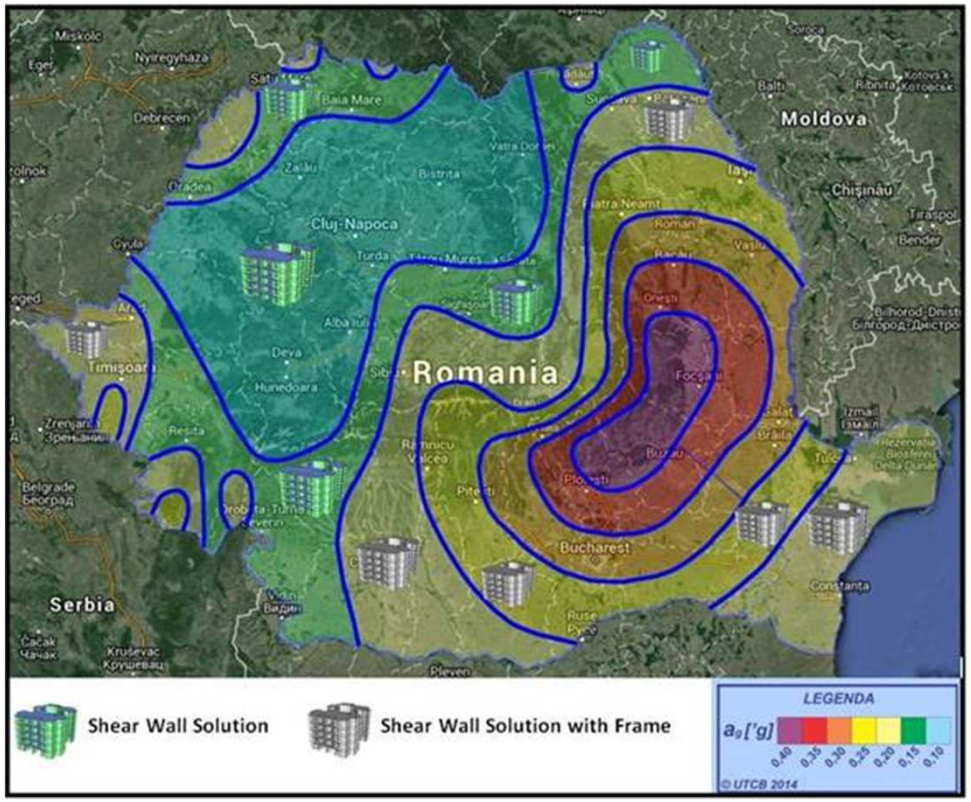
# 6. Projects & Hopes

Consolis R & D department is currently analyzing 2 new concepts for Romania:

- A shear wall concept: can be placed in seismic zones of PGA ≤ 0.15g, for example Cluj Napoca area.
- A shear wall with **frame concept:** Can be placed in seismic zones 0.15g < PGA ≤ 0.25g.
- No solution yet for a concept placed in high seismic zones > 0.25g



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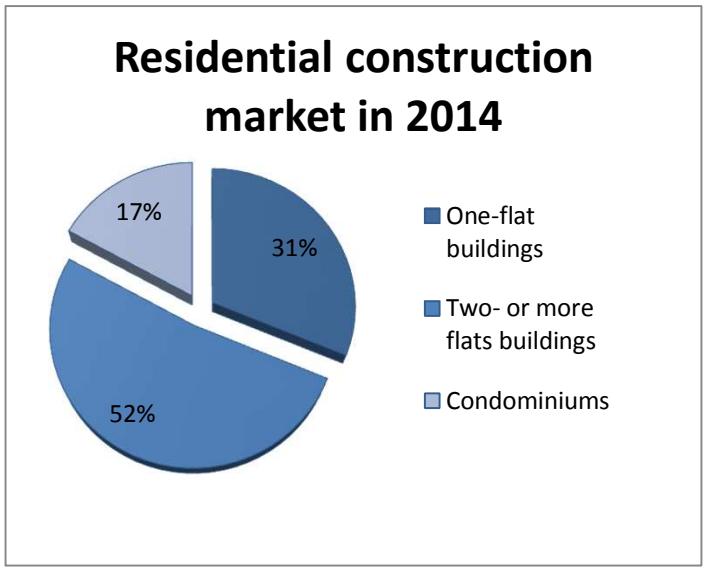
# 7. Romania & Hungary - Main Barrier : bad reputation & lack of promotion

- State subsidies for renovation programs available – focus mainly on thermal insulation and facade renovations ➔ minor image improvement for precast
- A couple of green energy and passive house type condominium projects executed, but exclusively cast-in-situ or brick constructions
- Residential market – condominium solutions :
  - **dormant in Hungary** – first sign of awakening in Q2 2016 – only in the individual house segment. No large scale housing projects in sight.
  - **growing in Romania** –residential new buildings made only & exclusively out of cast-in-situ, cellular concrete and / or bricks

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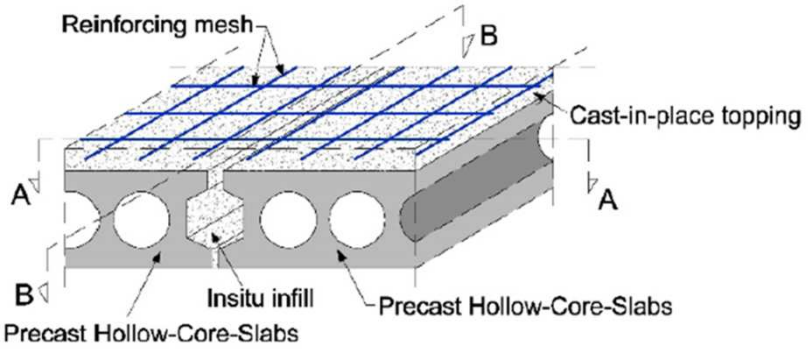
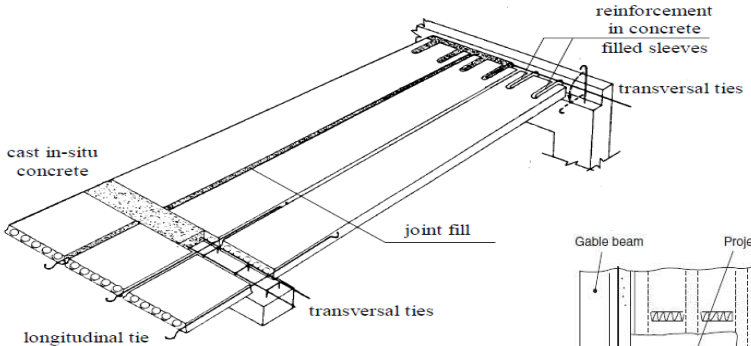
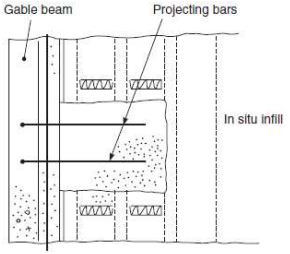
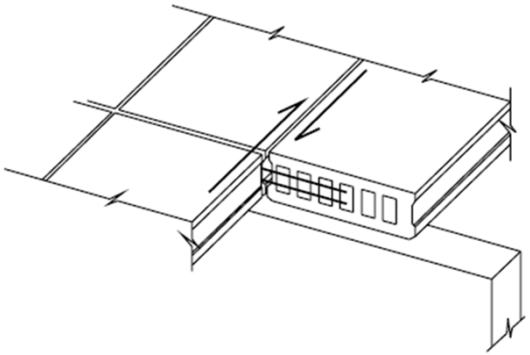
# 7. Romania - Further Barrier – Seismic Constraints

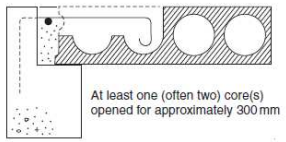
- 7 different & specific seismic areas
- particular attention / calculation needed for each area
- reinforced monolithic joints needed
- Cast-in-place topping needed:
  - ✓ Appropriate topping → drastically improves the rigidity of the diaphragm
  - ✓ Thickness of topping ≥ 40 mm if span ≤ 8 m
  - ✓ Thickness of topping ≥ 50 mm if span > 8 m
  - ✓ Mesh reinforcement connected to vertical resisting elements
  - ✓ Ties → system of reinforcement
  - ✓ Friction forces neglected





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## 8. Thank you for your kind attention !

# Conclusion : we will do our best to ➔

- ✓ Change and improve the perception of precast within the residential market segment
- ✓ Improve the presence of Hollow Core within the building market segment