

CASE STUDY

PRECAST INSULATED WALL PANELS

Ramirent Kungsängen Sweden



CEM-FIL MINIBARS™
High Performance Composite
Macrofiber



Horizontal stacked precast insulated panels



Warehouse and Office

Project Profile:

Category:	Commercial Building
Owner & Developer:	Kilenkrysset
Structural Engineer:	AFG Consulting Engineers
General Contractor:	Kilenkrysset
Precaster:	Kilenkrysset
Completion:	2015

Technical details:

Precast Element:	Precast Insulated Wall Panels 40mm (1 ½") outer concrete layer Stucco-style finish, painted black or white 60mm (2 ¼") inner concrete layer
Concrete Type:	C50/60 – 7250 psi
Composite reinforcement solution:	Cem-FIL MiniBars™ 43mm @ 5.7 Kg/m ³ – 9.6 lbs/yd ³ Composite bars strengthening at corners in window and door openings
Other:	-



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Project description:

For this 2-story front office and 3-story warehouse building project, the challenge for Kilenkryssset was to supply precast insulated wall panels that were 50% less weight and thinner profile than standard panels.

Such thin wall panels allow increasing the building's internal footprint. Lower panel weight reduces logistics cost, improves efficiency and simplifies installation by contractor.

By replacing all the welded wire reinforcing (WWR) steel mesh with MiniBars™ corrosion-free, high performance composite macrofiber, the need for concrete cover was reduced so that the thickness of both the outer and inner concrete layer were 50% less.

The outer layer was reduced from 80mm (3") to 40mm (1 ½").

The inner layer was reduced from 120mm (4 ¾") to 60mm (2 ¼").

Composite bars were used to strengthen the panels at stress concentration points at the inside corners of doors and windows.

Horizontally oriented panels do not require prestressed steel reinforcing that is typically used in vertical panels.

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