



Precast Weigh-In-Motion (WIM) Design and Installation

Precast WIM achieves maximum consistency, quality, and durability while improving installation efficiency.

The Advantages of Precast WIM

Due to increasing traffic volumes, weigh-in-motion scales and sensors need to be installed quickly to minimize the length of time roadways are restricted by traffic control. The solution is to fast-track the roadway project using precast concrete pavement and IRD Precast WIM. Precast concrete pavement can be installed in very short work windows, enabling pavement replacement in high-traffic areas during limited nighttime lane closures.

IRD WIM sensors are installed into precast concrete slabs in a controlled environment for maximum consistency and quality assurance. IRD's Precast WIM achieves the highest standards in operational reliability, stability and durability.

For precast concrete roadway projects IRD Precast WIM is installed using the same processes and equipment required for a roadway build. This means no special equipment or deviation from plan, and no unexpected surprises.



A variety of slab designs suit different sensor types and sites

Features

- Enables safe, rapid installation of all types of WIM, including Single Load Cell (SLC) scales, IRD-PAT Bending Plate® scales, SSWIM® scales or strip sensors
- Detailed engineering specifications and drawings ensure successful projects in all pavements
- Controlled concrete manufacturing conditions produce the best possible surface for optimal WIM accuracy
- Long-term performance is improved, and maintenance requirements reduced, with consistent concrete pours being carried out under ideal conditions to ensure the best possible structure and reinforcement



Concrete slabs are manufactured off-site prior to installation



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The IRD Precast WIM Advantage

IRD has years of experience working with multiple precast concrete manufacturers in the United States and Europe on over 40 successful precast projects.

IRD applies our precast expertise to your project by:

- Defining construction sequencing to minimize traffic disruptions
- Providing precast slab design consultation and specifications for joints, conduit, reinforcement, and slab smoothness
- Ensuring compliance with standards
- Supervising projects throughout the entire slab production process
- Providing on-site installation supervision to ensure the end system performs at a high level
- Planning the project with the entire WIM system life-cycle in mind to ensure easy system maintenance, sensor replacement as required, and system expansion as enforcement or data collection needs develop

Construction Considerations

Specifications vary depending on the WIM sensor to be installed, the road type, and the construction competencies available. Typically, IRD will work with the selected construction company to develop specifications specific to the project, and may be involved in the installation supervision and on-site construction.

Specifications include:

- Concrete compressive strength (PSI)
- Reinforcing bars (rebar) grade and coatings
- Surface texture
- Lifting inserts and anchor specifications
- Wiring conduit routing and port locations



Precast slab surface preparation



A precast slab being prepared for strip sensor installation

