

2010 Nassau-Queens Expressway Open House

NYSDOT EXPERIENCE
Precast Concrete Paving
Slabs

BACKGROUND

- **Precast Slabs used in NY since 2000**

Projects –Include both new construction & CPR

Tappan Zee Bridge – 135000 ADT

Belt Parkway - Queens

Rt 112 - Long Island

Fordham Road - Bronx

X-Town – Schenectady

I-90 – Albany

Korean Veterans Hwy - Staten Island

9A - Manhattan

When does NYSDOT Consider Precast?

- **SHORT WORK WINDOWS (< 8 HRS.)**
- **SMALL WORK ZONES**
- **NIGHT WORK**

Tappan Zee Toll Plaza (2001/2002)

135,000 Vehicles per Day





I-90

Albany, NY

(CPR Project -2004)

105,000 Vehicles per Day

Work Done 10:00 PM

To 6:00 AM

Drilling For Dowels

Two Bit Hydraulic Gang Drill



Precision Grading

Working on Rails



Open to Traffic

**By 6:00 AM
(Ungroued)**

**Next Night
(Groued)**



Good vs Bad Results!!

2004 - Turning point

1 project failure changed how NYSDOT looked at precast slabs (Route 9A)

A completed precast pavement had to be equivalent to a completed CIP PCC pavement.

STANDARDS NEEDED

- **Until 2004 NYSDOT was getting good results w/ a proven product**
- **With the 9A failure the DOT recognized a need for Standards and Specifications**
- **These specs/standards would ensure that the DOT would get a quality product and eliminate QC issues**

2005 - Standards Issued

Design Guidelines

Material Specification

Construction Specifications

See NYSDOT EI 05-041, 05-042, 05-043 Precast

See NYSDOT Standard Sheets 502-x Jt. layout

Design Guidance Highlights

- *Project Selection & Applications*
 - Open to traffic in 12 hrs. or less
 - Toll Plaza
 - Add on lanes
 - CPR applications
 - Repairs prior to a HMA overlay

Material Specification

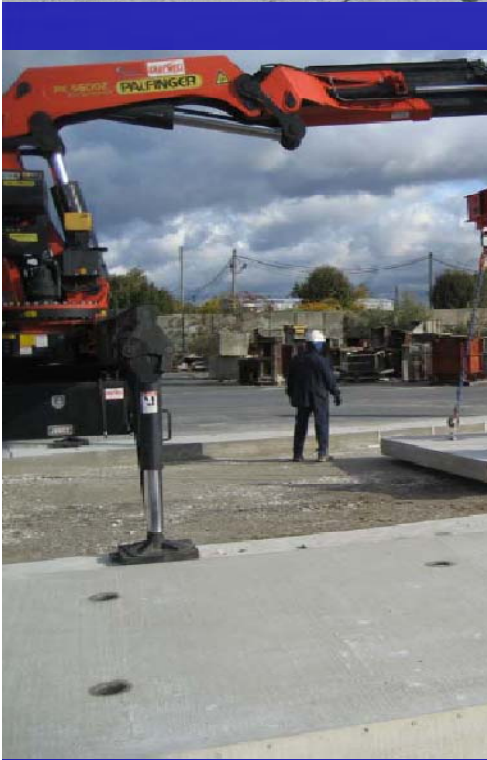
APPROVED LIST ESTABLISHED

Required the following submittals:

- **Fabrication Standard Drawings**
- **Fabrication Working Drawings for projects**
- **Manufacturer's Installation Instructions including,**
 - **Subbase prep**
 - **Slab installation**
 - **Leveling slabs**
 - **Backfilling Hardware Instructions**

TRIAL INSTALLATION

- **Follow the Manufacturer's Instructions**
 - **SUBBASE PREP**
 - **SLAB INSTALLATION**
 - **BEDDING GROUT**
 - **BACKFILL MATERIAL / VERIFY STRENGTH GAIN**
 - **SLAB TOLERANCES CONFORM TO THE DRAWING**
 - **CHECK LTE**



Construction Specification

PRECAST CONCRETE PAVING SLAB SYSTEMS

- **Prepave Meeting – Review Responsibilities**
- **Precast Designer / Technical Assistance**
- **Contractor provides joint layout**
- **Opening to traffic requirements.....**
 - Backfill material reaches 2000 PSI**
 - Bedding mat'l reaches strength**

Advantages of Precast Slabs for NYSDOT

- High load carrying capacity**
- Durable**
- Eliminate early age cracking**
- Can be open to traffic on time**

Precast Disadvantages

- \$\$\$\$
- Vertical & Horizontal Misalignment
- Permeable base issues *

Thank You!