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Precast Award Program

“Gold Class Producers”

UDOT Strategic Goals

- **Emphasis Areas:**
 - INTEGRATED TRANSPORTATION
 - COLLABORATION
 - EDUCATION
 - TRANSPARENCY
 - **QUALITY**

Quality Definition:

- The standard of something as measured against other things of a similar kind; the degree of excellence of something.

Measuring and Incentivizing Quality

- Two levels of measurement for Precast Plants:
 - Quality of processes
 - Quality of material (concrete)
- Incentives for Quality
 - Quality Awards

Awards first presented in 2014

- 4 gold and 2 silver awards in 2014
- 5 gold and 1 silver award in 2015
- 4 gold and 0 silver in 2016

Annual Recognition



Presentation Ceremony

- Presentation is done at precast yard along with lunch
- Entire work force is encouraged to attend

UDOT inspectors, Plant Manager, Production Manager, QC Manager



Full Crew Is Responsible for Quality



Pizza & BBQ – Celebrating Success



Benefits now and in the future

- Smooth running facilities require less inspection hours to oversee production of product.
- Opportunity to assess and address recurring issues and take improvement steps
- Possible future bid incentive to precasters operating at a “Gold Class” level.

How do we determine
who is eligible for awards
?

Daily Inspection Reports
Generate Data pertaining to
the performance of the QC
department at the precast
facility.

Daily Inspection Report

UDOT Precast Concrete Daily Inspection Report - RI

Project Year: _____ Date: _____ Time: _____
 Inspector Name: _____ Page # _____ Time Out: _____
 Air Meter Correction: QA _____ vs. QC _____ + Travel _____ min.

PRE-POUR INSPECTION

Product Description: _____ Piece #: _____ Qty: _____
 Project Name: _____ Drawing #: _____ Stamp Date: _____
 Precaster completed QC Signature: _____
 UDOT (QA) Inspector assessment: OK-as-is [] ISSUES [] product [] process []

CONCRETE QUALITY ASSESSMENT

of tests rejected: _____ retained _____ of # observed tested = _____

Supplier: _____ Mix ID #: _____ Qty: _____ cu/yd (total placement)
 Slump/Spread: _____ Ambient air temp: _____ C/F [] F [] N []
 Air content %: _____ Placement time: _____ min. VSI _____ U/W _____
 Concrete Temp: _____ Batch weights & W/C ratio: _____ OK? Y [] N []

PRE-POUR INSPECTION

Product Description: _____ Piece #: _____ Qty: _____
 Project Name: _____ Drawing #: _____ Stamp Date: _____
 Precaster completed QC Signature: _____
 UDOT (QA) Inspector assessment: OK-as-is [] ISSUES [] product [] process []

CONCRETE QUALITY ASSESSMENT

of tests rejected: _____ retained _____ of # observed tested = _____

Supplier: _____ Mix ID #: _____ Qty: _____ cu/yd (total placement)
 Slump/Spread: _____ Ambient air temp: _____ C/F [] F [] N []
 Air content %: _____ Placement time: _____ min. VSI _____ U/W _____
 Concrete Temp: _____ Batch weights & W/C ratio: _____ OK? Y [] N []

Two key elements are monitored

- 1= performance of the QC dept. as far as how well the pre-inspection functions are performed.
- 2= consistency of the concrete delivered

QC performance / Conc. Quality

UDOT Precast Concrete Daily Inspection Report - RI

Project Year: _____ Date: _____ Time In: _____
 Inspector Name: _____ Page #: _____ Time Out: _____
 Air Meter Calibration QA vs. QC: _____ + Travel: _____ min.

PRE-POUR INSPECTION

Product Description: _____ Piece #: _____ Qty: _____
 Project Name #: _____ Drawing #: _____ Stamp Date: _____
 Pre-pour completed QC Signature: _____
 UDOT (QA) inspector assessment: OK as-is | ISSUES: | product | process

CONCRETE QUALITY ASSESSMENT

of loads rejected: _____ retained: _____ of # observed tested = _____

Supplier: _____ Mix ID #: _____ Qty: _____ cu/yd (total placement)
 Slump/Spread: _____ Ambient air temp: _____ C/F V | I N | |
 Air content %: _____ Placement time: _____ min. VSI: _____ U/W: _____
 Concrete Temp: _____ Batch weights & W/C ratio: _____ OK? V | I N | |

PRE-POUR INSPECTION

Product Description: _____ Piece #: _____ Qty: _____
 Project Name #: _____ Drawing #: _____ Stamp Date: _____
 Pre-pour completed QC Signature: _____
 UDOT (QA) inspector assessment: OK as-is | ISSUES: | product | process

CONCRETE QUALITY ASSESSMENT

of loads rejected: _____ retained: _____ of # observed tested = _____

Supplier: _____ Mix ID #: _____ Qty: _____ cu/yd (total placement)
 Slump/Spread: _____ Ambient air temp: _____ C/F V | I N | |
 Air content %: _____ Placement time: _____ min. VSI: _____ U/W: _____
 Concrete Temp: _____ Batch weights & W/C ratio: _____ OK? V | I N | |

UDOT Precast Concrete Daily Inspection Report - RI

Project Year: _____ Date: _____ Time In: _____
 Inspector Name: _____ Page #: _____ Time Out: _____
 Air Meter Calibration QA vs. QC: _____ + Travel: _____ min.

PRE-POUR INSPECTION

Product Description: _____ Piece #: _____ Qty: _____
 Project Name #: _____ Drawing #: _____ Stamp Date: _____
 Pre-pour completed QC Signature: _____
 UDOT (QA) inspector assessment: OK as-is | ISSUES: | product | process

CONCRETE QUALITY ASSESSMENT

of loads rejected: _____ retained: _____ of # observed tested = _____

Supplier: _____ Mix ID #: _____ Qty: _____ cu/yd (total placement)
 Slump/Spread: _____ Ambient air temp: _____ C/F V | I N | |
 Air content %: _____ Placement time: _____ min. VSI: _____ U/W: _____
 Concrete Temp: _____ Batch weights & W/C ratio: _____ OK? V | I N | |

PRE-POUR INSPECTION

Product Description: _____ Piece #: _____ Qty: _____
 Project Name #: _____ Drawing #: _____ Stamp Date: _____
 Pre-pour completed QC Signature: _____
 UDOT (QA) inspector assessment: OK as-is | ISSUES: | product | process

CONCRETE QUALITY ASSESSMENT

of loads rejected: _____ retained: _____ of # observed tested = _____

Supplier: _____ Mix ID #: _____ Qty: _____ cu/yd (total placement)
 Slump/Spread: _____ Ambient air temp: _____ C/F V | I N | |
 Air content %: _____ Placement time: _____ min. VSI: _____ U/W: _____
 Concrete Temp: _____ Batch weights & W/C ratio: _____ OK? V | I N | |

QC Evaluation

- How well are the precasters Quality Control personnel performing their jobs ?

When evaluating the QC departments effectiveness, there are 3 possible choices for the inspector to document

- 1) OK as-is
- 2) Issues w/ product
- 3) Issues w/ process

Pre-pour completed QC Signature _____
 UDOT (QA) inspector assessment OK as-is [] ISSUES [] product [] process

Things that can trigger a problem with product checkmark

UDOT Precast Concrete Daily Inspection Report - R1

Project Name: _____ Date: _____ Time In: _____
 Inspector Name: _____ Page #: _____ Time Out: _____
 Air Meter Circulation QA vs. QC: _____ - Travel: _____ min.

PRE-POUR INSPECTION

Product Description: _____ Piece #: _____ Qty: _____
 Project Name #: _____ Drawing #: _____ Stamp Date: _____
 Pre-pour completed QC Signature: _____
 UDOT (QA) inspector assessment: OK as-is [] ISSUES [] product [] process

- Inadequate clear cover
- Damage to rebar coating
- Wrong spacing of rebar
- Wrong type & grade of rebar

CONCRETE QUALITY ASSESSMENT

of loads rejected: _____ # of loads retested: _____ of # observed tested = _____

Supplier: _____ Mix ID #: _____ Qty: _____ cu/yd (total placement)
 Slump/Spread: _____ Ambient air temp: _____ min. VSI: _____
 Air content %: _____ Placement time: _____ min. VSI: _____
 Concrete Temp: _____ Batch weights & W/C ratio: _____ OK? Y [] N []

PRE-POUR INSPECTION

Product Description: _____ Piece #: _____ Qty: _____
 Project Name #: _____ Drawing #: _____ Stamp Date: _____
 Pre-pour completed QC Signature: _____
 UDOT (QA) inspector assessment: OK as-is [] ISSUES [] product [] process

CONCRETE QUALITY ASSESSMENT

of loads rejected: _____ # of loads retested: _____ of # observed tested = _____

Supplier: _____ Mix ID #: _____ Qty: _____ cu/yd (total placement)
 Slump/Spread: _____ Ambient air temp: _____ min. VSI: _____
 Air content %: _____ Placement time: _____ min. VSI: _____
 Concrete Temp: _____ Batch weights & W/C ratio: _____ OK? Y [] N []

Problems with Product

- Damaged epoxy coating
- Inadequate Clear Cover
- Wrong size reinforcing
- Wrong spacing of reinforcing
- Wrong type or grade of reinforcing
- Dimensional issues

Things that can trigger a problem with process checkmark

UDOT Precast Concrete Daily Inspection Report RI

Project Year: _____ Date: _____ Time In: _____
 Inspector Name: _____ Page #: _____ Time Out: _____
 Air Meter Correction QA: _____ vs. QC: _____ Travel: _____ min.

PRE-POUR INSPECTION

Product Description: _____ Piece #: _____ Qty: _____
 Project Name: _____ Drawing #: _____ Stamp Date: _____
 Prec-pour completed QC Signature: _____
 UDOT (QA) Inspector assessment: OK as-is ISSUES product process
*- No disconnected pre-pour in place
 - Approved plans not available for work
 - All inspection and work*

CONCRETE QUALITY ASSESSMENT

of loads rejected: _____ retested: _____ of # observed tested = _____
 Supplier: _____ Mix ID #: _____ Qty: _____ cu/yd (total placement)
 Slump/Spread: _____ Ambient air temp: _____ C/F:
 Air content %: _____ Placement time: _____ min. VSL: _____ U/W: _____
 Concrete Temp: _____ Batch weights & W/C ratio: _____ OK?

PRE-POUR INSPECTION

Product Description: _____ Piece #: _____ Qty: _____
 Project Name: _____ Drawing #: _____ Stamp Date: _____
 Prec-pour completed QC Signature: _____
 UDOT (QA) Inspector assessment: OK as-is ISSUES product process

CONCRETE QUALITY ASSESSMENT

of loads rejected: _____ retested: _____ of # observed tested = _____
 Supplier: _____ Mix ID #: _____ Qty: _____ cu/yd (total placement)
 Slump/Spread: _____ Ambient air temp: _____ C/F:
 Air content %: _____ Placement time: _____ min. VSL: _____ U/W: _____
 Concrete Temp: _____ Batch weights & W/C ratio: _____ OK?

Problems with Processes

- No documented pre-pour inspection
- Working off wrong plans or plans that have not yet been approved for construction
- No qualified/certified inspectors on site to perform QC functions
- Deviation from approved plans without prior approval

Concrete Quality Evaluation

- How reliable are the mix designs being used ?

What causes a concrete deficiency checkmark

LDOT Precast Concrete Daily Inspection Report - RI

Project Name _____ Date _____ Time _____
 Inspector Name _____ Page # _____ Time Out _____
 Job State Construction (A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z) _____ Travel _____ mi.

PRE-PUR INSPECTION

Product Description _____ Plant # _____ On _____
 Project Name # _____ Drawing # _____ Stamp Date _____
 Pre-pour completed QC Signatures _____
 LDOT (DA) Inspector assessment: OK ISSUES product process

CONCRETE QUALITY ASSESSMENT

of tests rejected _____ retested _____ of # observed tested = _____

Supplier _____ Mix ID # _____ Qty _____ cu yd (total placement)
 Slump/Spread _____ Ambient air temp _____ CFT Y | N |
 Air content % _____ Placement time _____ min. VM _____ DW _____
 Concrete Temp _____ Batch weights & W/C ratio _____ OK? Y | N |

PRE-PUR INSPECTION

Product Description _____ Plant # _____ On _____
 Project Name # _____ Drawing # _____ Stamp Date _____
 Pre-pour completed QC Signatures _____
 LDOT (DA) Inspector assessment: OK ISSUES product process

CONCRETE QUALITY ASSESSMENT

of tests rejected _____ retested _____ of # observed tested = _____

Supplier _____ Mix ID # _____ Qty _____ cu yd (total placement)
 Slump/Spread _____ Ambient air temp _____ CFT Y | N |
 Air content % _____ Placement time _____ min. VM _____ DW _____
 Concrete Temp _____ Batch weights & W/C ratio _____ OK? Y | N |

Concrete Deficiencies

- Does not indicate that out of spec concrete was placed into formwork
- Rejected or Retested Loads are documented
- The goal is to have the mix designs dialed in so that consistent concrete is provided with testing to verify compliance with specification

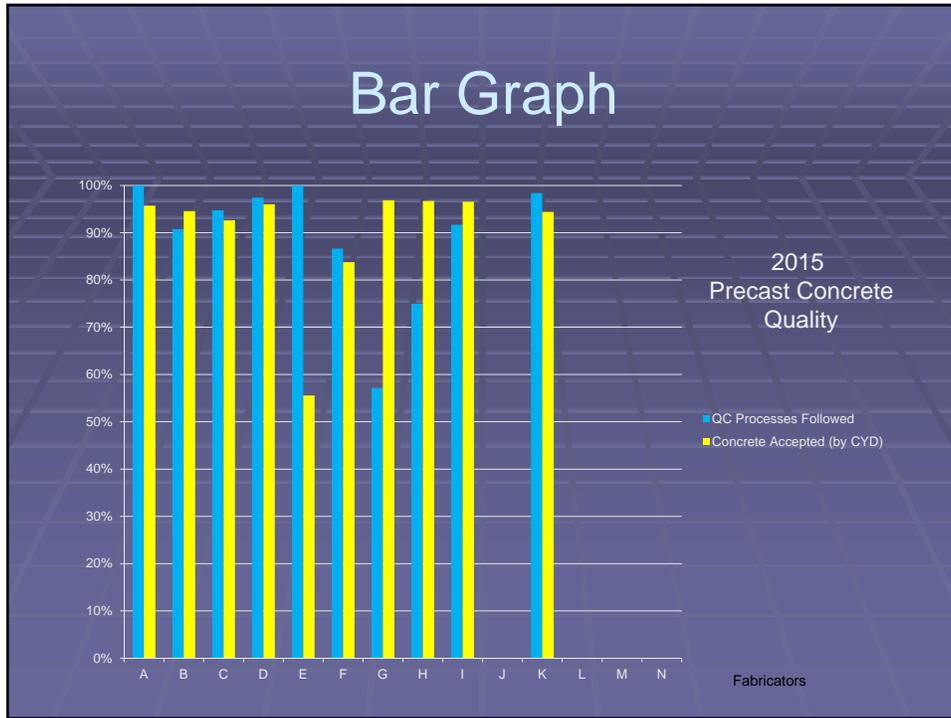
Concrete Quality is weighted by the volume placed (cu yds)

CONCRETE QUALITY ASSESSMENT

of loads rejected 0 retested 0 of # observed tested = 1

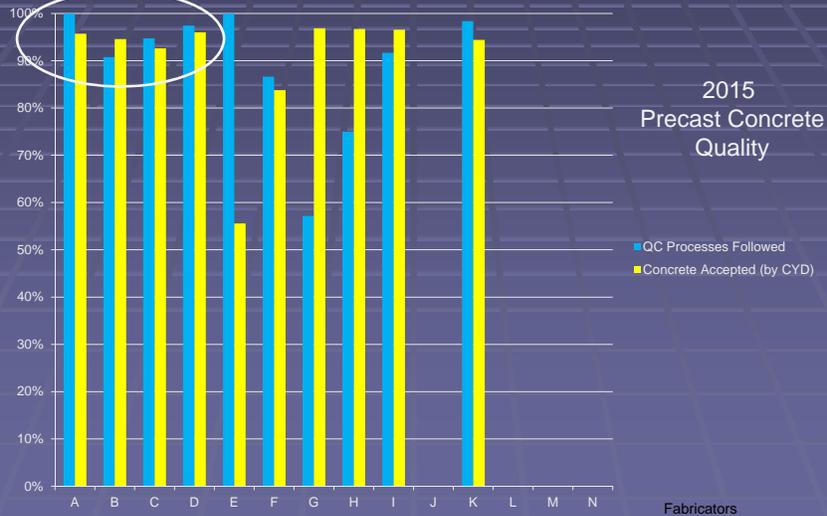
Supplier <u>placast</u>	Mix ID # <u>scc</u>	Qty <u>2</u> cu/yd (total placement)
Slump/Spread <u>23</u>	Ambient air temp <u>30</u>	Cyl? Y [<input checked="" type="checkbox"/>] N [<input type="checkbox"/>]
Air content % <u>6.0</u>	Placement time <u>230</u> min.	VSI <u>0</u> U/W <u></u>
Concrete Temp <u>79</u>	Batch weights & W/C ratio	OK? Y [<input type="checkbox"/>] N [<input type="checkbox"/>]

After data is collected, it is input and a bar graph is created showing quarterly results.



Plants achieving a cumulative score of 90% or above on both Quality Control processes and Concrete Quality receive “Gold Class” awards.

90 % goal for both yellow and blue bars on graph



Gold Class



Plants that are very close to achieving “Gold Class” awards are evaluated to see if they are improving from the previous year and from first to last quarter etc. and may be eligible for “Silver Class” award.

QUESTIONS ?