



# Director's Claims Board

## ODOT Project 2(07)

Claim 12-070002-01

Pavement Repair

*Decided: December 15, 2010*

On Tuesday, September 28, 2010 at ODOT's Central Office in Room 1C, the Director's Claims Board ("Board") heard oral presentations of Karvo Paving Company ("Karvo" or "Contractor") and ODOT District 12 ("District") relative to the subject issue. Prior to the oral presentations and in accordance with the Dispute Resolution and Administrative Claim Process set forth in the contract, the Board received written documentation from the Contractor on June 4, 2010 and then from the District on July 14, 2010.

The Board consisted of Gary Middleton, P.E., Administrator, Office of Construction Administration; Dave Humprey, P.E., Administrator, Office of Pavement Engineering; and Tim McDonald, P.E., Deputy Director, Division of Production Management.

The District 12 representatives at the hearing were Ray Bencivengo, P.E., Randy Over, P.E. and Robert Wallace, P.E.

John Chiarappa and George Karvounidis represented Karvo Paving Company.

Chet Lyman, Esq., Assistant Legal Counsel, Office of Chief Counsel served as the Secretary of the Board.

Pam Clawson, P.E. and Julia Miller, P.E. of ODOT's Division of Construction Management observed the hearing.

### **PROJECT DESCRIPTION:**

The project consisted of pavement repair and overlay, guardrail upgrade, lighting upgrade and traffic control upgrades of IR480 from the east approach of the Rocky River Bridge to West 130<sup>th</sup> Street Ramp. The existing wearing course was planed and the pavement of IR480 and acceleration and deceleration lanes resurfaced. Nine specified ramps were replaced full depth and another three ramps were resurfaced.

This \$14,878,729.43 contract was signed on April 4, 2007 with a final completion date of May 31, 2008. The final value of the contract was \$15,354,902.16. The revised completion date was November 1, 2009. Physical work was complete on October 28, 2009.

### **CLAIM OVERVIEW:**

Karvo began placement of 12' wide concrete pavement on Ramp R (IR480W to IR71S) on May 30, 2008, and finished June 11, 2008. The ramp was open to traffic on July 19, 2008. On June 3, 2009, Karvo was notified of hair line cracks which had developed on Ramp R and Ramp W. On August 20, 2009, Karvo proposed corrective options which were turned down. On September 21, 2009, Karvo performed 68 retro-fit repairs as directed by the District. Force account records were kept for this work which Karvo calculates at **\$47,164.73**.

**CONTRACTOR'S POSITION:**

Karvo stated it performed all its work according to the plans and specifications and all the materials used were approved by ODOT. Karvo pointed to poor subgrade encountered during proof rolling as reason for the cracking. Karvo claimed ODOT personnel limited the amount of undercutting on Ramp R due to "lack of funds". Karvo's calculations show that the percentage of undercutting allowed on Ramp R (5%) was significantly less than that allowed for Ramp S (30%), which has not exhibited cracking.

In April of 2009, Karvo was given a punch list dated March 23, 2009, which did not include any required repairs to Ramp R. In June 2009, a year after the pavement was placed, Karvo received a notice to make repairs due to hairline mid-panel cracks. ODOT did not issue a partial or final acceptance C-85 for the concrete pavement in October 2008 and prior to allowing traffic to use Ramp R. In neglecting to do so, Karvo argued, ODOT violated C&MS Section 451.16.

The project experienced an excusable, compensable delay relating to highway lighting that extended the project completion date to July 15, 2009. The project was substantially complete on October 31, 2008. If the completion date had not been extended, Karvo maintained, it would not be responsible for the pavement since this is not a warranty job.

Hairline cracks less than 1/8" are common, even expected, in reinforced pavements, Karvo claimed. Usually these cracks, when they appear, are just sealed. ODOT improperly directed Karvo to perform the repair work.

Karvo pointed out ODOT has recently changed its joint spacing design requirements to help eliminate mid-panel cracking. This project's plan included the old design.

Karvo stated that ODOT did approve the subgrade as a result of passing compaction test results, but Karvo was also told to prohibit heavy equipment on the ramp. Karvo also stated the subgrade was rutting under the weight of a pick-up truck. Karvo presented several daily reports from June 2008 stating "subgrade pumping" and "subgrade unstable, serious rutting in shoulder". Karvo also included a letter dated May 20, 2008, which states "... Karvo Paving is of the opinion that the sub-grade on Ramp S is unstable. The sub-grade will not support minor construction traffic i.e. pickup trucks and tool vans without rutting and pumping." And noted the "S" is a typographical error and the letter should have read "... Ramp R is unstable."

In response to ODOT's rebuttals of its claim:

- Karvo agreed that it did use MS concrete on Ramp R rather than Class C concrete as specified due to time constraints, but Karvo pointed out that ODOT did accept that change.
- Karvo stated it did run the HIPERPAVE data prior to concrete placement and pointed out it had no notice from ODOT that the data was not submitted until Step 2 of the claim.
- Karvo acknowledged there was some pavement cracking which was the responsibility of Karvo. Those were due to incorrect joint spacing and sawing too early. Those were repaired but were not included in the claim.
- Karvo also acknowledged diamond grinding was required on Ramp R. The pavement could not be placed as defined by C&MS Section 451 due to tight constraints (ramp was between traffic and concrete barrier wall) therefore the surface was finished by hand.
- Karvo agreed it did not request a partial C-85 because C&MS Section 451 reads "The issuance of a partial C-85 will occur within 30 days after the pavement is completed and accepted ..."

- Karvo stated of the 68 cracks that were repaired, 54 were in areas with no undercutting performed.

**DISTRICT'S POSITION:**

C&MS Section 451.16 states "Repair transverse or diagonally cracked PCC pavement with a full depth repair according to Item 255 and applicable standard construction drawings." The District argued this specification supports its position that the cost to remedy the deficient mid-panel cracks is the contractor's responsibility.

Karvo did not request partial acceptance as per C&MS109.11. Therefore, a partial acceptance inspection was not performed and subsequent issuance of a partial C-85. C&MS 109.11 states: "Upon completion of a portion of the Work, the Contractor may request partial acceptance of that portion of the Work."

The District determined the work was defective as defined in C&MS105.11. After rejecting the contractor's suggestions for repair, the District provided the contractor with three corrective options by letter dated August 27, 2009.

Karvo did not raise a concern about the subgrade prior to the discovery of the cracks.

Karvo used Class MS concrete in lieu of Class C concrete. The District stated there is always more risk of early age cracking with high cement content concrete. MS concrete has 33% more cement than Class C concrete. Contractors are permitted that option, but accept the risks associated with that elective product.

Karvo did not submit its HIPERPAV data until Step 2 of the Dispute Resolution Process. When the District did receive and analyzed the data the District concluded Karvo entered HIPERPAV data incorrectly.

- Karvo used Class C concrete in the data but used MS concrete in actuality.
- Karvo entered limestone instead of slag.
- Karvo used default temperatures (42.9° to 58.7°) instead of actual temperatures (50.2° to 87.8°).
- Karvo's sawcut scenario was not accurate. The Contractor should have assumed zero and allowed the software to determine the sawcut timing. The Contractor actually entered a sawcut time of 10 hours.

ODOT's HIPERPAVE analysis using the correct data revealed the risk of cracking occurring 10 hours after placement.

Karvo had to grind the surface of Ramp R due to surface variations exceeding  $\frac{1}{4}$ " in 10'.

A partial final inspection "does not relieve the contractor of a responsibility to correct defective work" per C&MS109.11.

The District stated that the majority of the ramp is constructed in an excavated area. Yet cracks appear on both the excavation and embankment portion of the ramp. Since the majority of the ramp was constructed in an excavation area, the District claims Karvo's stated 5% undercutting is misleading. The District calculated 25% of Ramp R in the embankment portion was undercut.

## **DIRECTOR'S CLAIMS BOARD FINDINGS:**

### **Facts**

The Board finds that the majority of facts contained in the submissions and presentations by the parties are either consistent or undisputed and can be relied upon to form the basis of this decision. The following facts are central to the decision:

1. C&MS Section 105.03 states: "If the DCE determines the Work is not in reasonably close conformity with the Contract Documents and determines the Work is inferior or unsatisfactory, remove, replace, or otherwise correct the Work at no expense to the Department."
2. C&MS Section 451.16 states:  
*Repair transverse or diagonally cracked full depth pavement, longitudinally cracked full depth pavement ... at no cost to the Department... Perform the repairs until the Department's Form C-85(Report of Final Inspection and Acceptance) or partial C-85 is issued for the pavement...The issuance of a partial C-85 will occur within 30 days after the pavement is completed and accepted, and all safety items are in place to allow the pavement to be safely open to traffic during the winter months from December 1 to April 30.*
4. C&MS Section 109.11 states: "Partial acceptance ... does not relieve the contractor of responsibility to correct defective work..."
5. Karvo sent a letter dated May 20, 2008, which states "... Karvo Paving is of the opinion that the sub-grade on Ramp S is unstable. The sub-grade will not support minor construction traffic i.e. pickup trucks and tool vans without rutting and pumping."
6. On June 3, 2009, Karvo was notified of hair line cracks which had developed on Ramp R and Ramp W.
7. On August 20, 2009, Karvo proposed corrective options which were turned down.
8. On September 21, 2009, Karvo performed 68 retro-fit repairs by one of the three methods which were offered by the District as an approved correction.

### **Conclusions**

Cracking of newly placed concrete slabs shortly after placement is not unusual or unexpected. Any of a myriad of factors including the design of the concrete mix, the environmental conditions and the construction methods used may potentially cause cracking of concrete pavement. Even with the most conscientious construction methods and in the best environmental circumstances cracking may occur. To that end, ODOT, in C&MS Section 451.16, notifies the Contractor that the repair of cracks will be made at no cost to the Department. The Board finds this language to be a clear and unambiguous notice to a contractor that there is an expectation by the Department that a bid should also include requisite repairs.

Karvo argued it is not responsible for the pavement repair because District 12 did not issue a partial acceptance C-85 within 30 days after completion of the pavement. The Board finds C&MS Section 109.11 clearly and unambiguously states that partial acceptance may be requested by the Contractor and does not relieve the Contractor of the responsibility to correct defective work or repair damage caused by the Contractor. The Board has determined that the Contractor did not request partial acceptance of the pavement pursuant to C&MS 109.11. Since the Contractor failed to request partial acceptance, any argument regarding the applicability of acceptance and C-85 issuance under C&MS 451.16 is moot.

Karvo has also pointed to defective joint spacing design and poor subgrade as reasons for the pavement cracking. In order to prevail on a defective design or specification argument the contractor must first demonstrate it performed in accordance with all contract requirements. The District demonstrated several instances of Contractor data input errors in the HIPERPAVE analysis which would have resulted in erroneous values that would have given the Contractor a false sense of security with respect to cutting joints. Using the proper data, ODOT produced results which indicated the Contractor was at risk even beginning work under that particular set of circumstances.

Based on the information presented by ODOT's pavement expert, the Board acknowledges that this mid panel cracking is more commonly seen as a result of temperature variation in the concrete slab rather than as a result of poor subgrade. Concrete pavement distresses caused by poor subgrade are manifested as both transverse and longitudinal cracking over the entire slab face. In this case, the failure pattern exhibited was mid panel cracking only. This mid panel cracking was a latent defect that did not appear until the ramp was open to traffic.

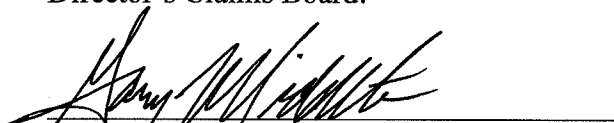
Therefore, the Board was not presented with compelling evidence to justify any deviation from the plain terms of the contract with regard to the pavement repair requirements as set forth in C&MS Section 451.16. Accordingly, the Board has determined that the Contractor did not prove entitlement.

**DAMAGES:**

Based on the above findings, the Contractor is not entitled to reimbursement for damages.

This recommendation submitted this 15<sup>th</sup> day of December, 2010.

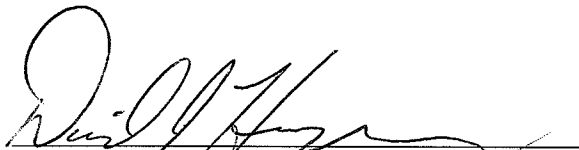
Director's Claims Board:



Gary Middleton, P.E.  
Administrator, Office of Construction Administration

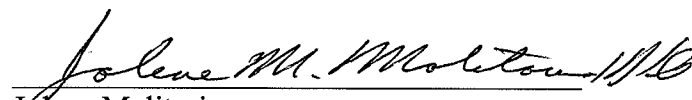


Tim McDonald, P.E.  
Deputy Director, Production Management



Dave Humphrey, P.E.  
Administrator, Office of Pavement Engineering

Approval of this recommendation:



Jolene Molitoris  
Director, Ohio Department of Transportation

12/17/10  
Date