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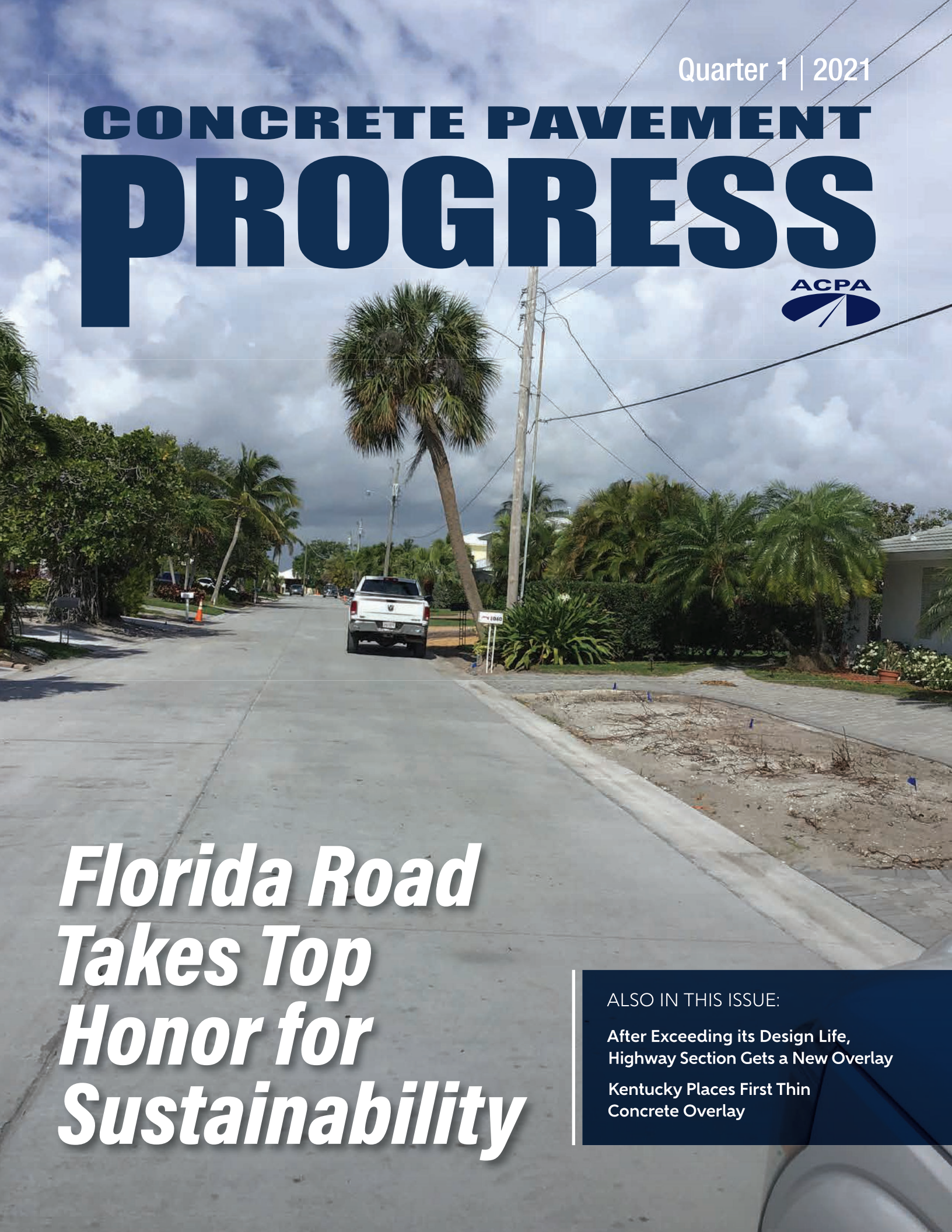

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The Implied Warranty of Design

THE MOST IMPORTANT PART OF A CONTRACT THAT IS NOT ACTUALLY WRITTEN IN IT

By Thomas R. Olson

FOR BID-BUILD PROJECTS (as opposed to *design-build projects*), contractors normally assume that they are not responsible for the project design. But how often has a contractor constructed the project as designed and, notwithstanding that, defects arose (e.g. cracking) that the engineer required the contractor to remedy at its own cost? Is this fair? Is this legal? Does a contractor have a right to be reimbursed for these extra costs? Does a contractor have a right to a time extension for the related delay?

These are critical questions because the cost in both time (i.e. liquidated damages) and dollars can be huge. And it is not as though the contractor can include these costs in its bid. A contractor would have no way of knowing *how much* to include in its bid. And, even if it could somehow try to include some amount, chances are the contractor could not/would not succeed in submitting the low bid.

The reality is that if contractors are required to pay for the costs of design-related defects, it is *coming right off the bottom line*. It may mean the difference between a project being profitable or suffering a substantial loss.

Given the very real financial consequences of this, contractors (and engineers as well) must know the answer to the following: When is a contractor required to pay for the costs of remedying defects notwithstanding full or substantial compliance with the design requirements? The answer to this turns on *whether the owner impliedly warranted the project design*.

1. What is an implied warranty of design?

The rights and obligations that are *written in the contract* are called *express*. You know they are part of the contract because *you can read them*. They are in the contract because the *owner and engineer* decided they wanted them in the contract.

Equally important are portions of the contract that are *not* actually *written in it*. These portions are *implied*. Although they are not composed by words written by the owner or engineer, they are no less a part of the contract. *Implied contract provisions* are provisions that *courts* have determined shall be included as part of the contract. In public construction, that includes *implied*

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warranties. There are many of these implied warranties, including but not limited to the implied duty of good faith and fair dealing and the implied warranty to disclose relevant site data. One of the most important is the *implied warranty of design*.

When such a warranty applies to a construction contract, the owner is deemed to have *guaranteed the adequacy of the design*. If the contractor sufficiently complies with the owner's design and, notwithstanding that, defects arise, the owner is financially responsible to pay for the cost of remedying the defects. Since an *implied warranty of design,* like any implied warranty, is not actually written in the contract, the only way you can know about it is by educating yourself on what courts have ruled (since courts, not owners or engineers, have decided it should be part of the contract).

2. When does an implied warranty of design apply?

In order to determine if an implied warranty applies, courts examine *how much discretion a contractor has to construct the project. See, e.g., Blake Const. Co. v. U.S.,* 987 F.2d 743, 746 (1993).[1] The more discretion a contractor has on what materials to use, what equipment to use, and how to construct the project, the less likely the owner is deemed to have impliedly warranted the design. By contrast, the more that the owner/engineer detail how and what the contractor must do, the more likely there will be an implied warranty.

In order to determine the amount of discretion a contractor has, and consequently whether the owner should be deemed to have impliedly warranted the design, courts focus on to what extent the contract is composed of "performance" versus "design" requirements.

3. What is the difference between 'performance' and 'design' requirements?

For *concrete pavement construction,* there are normally three parts: equipment, materials, and methods. Applicable specifications may include "performance" requirements, which are typically defined as those which *allow the contractor discretion on how to perform the work. End-result specifications* are examples of this. They "set forth operational characteristics for the item. In such specifications, *design, measurements, and other specific details are not stated nor considered important." See Appeal of Datametrics, Inc.,* ASBCA No. 16086, 74-2 BCA 10742 at 8 (1974) (emphasis added). Two examples from the Nebraska Department of Transportation Standard Specifications for Highway Construction ("NDOT Specs") are:

- "The method used to place concrete shall not allow the concrete materials to segregate." Section 601.01(5).
- "The slip form paving equipment shall be able to consolidate the freshly placed concrete." Section 603.03(3)(c).

Specifications may also include "design" requirements, which are typically defined as those which *provide the contractor little or no discretion*. They prescribe, for example, "the character, dimensions, and location of the construction work." *See, e.g., J.D. Hedlin Constr. Co. v. U.S.,* 171 Ct. Cl. 70, 347 F.2d 235, 241 (1965). Two examples from the NDOT Specs are:

- "Transverse joints for doweled concrete pavement shall be constructed perpendicular to the roadway on 16'-6" (5 mm) centers." Section 603.03.4.a.
- "Operations will not be started until the ascending ambient air temperature reached 40 degrees F (5 degrees C)." Section 603.03.2f(f).

4. Do courts around the country define these requirements the same way?

Part of the challenge for contractors is understanding that courts around the country do *not* define these requirements the same way. While it is generally true that courts seek to determine "how much" discretion a contractor has, courts differ on both what qualifies as a "design" specification and the baseline at which contractors have so much discretion that the applicable requirements are treated as "performance" specifications (*in which case the owner does not warrant the design*).

Some courts, for example, have treated "Mix" specifications as "performance" requirements because they are based on *minimums, maximums, and ranges*. These courts have reasoned that since the contractor has discretion on developing an acceptable design within these parameters, *the owner does not warrant the design. See, e.g., A.G.*

Cullen Const., Inc. v. State System of Higher Education, 898 A.2d 1145, 1157 (Pa. Dist. Ct. 2006). If there is no warranty, then the contractor needs to understand that *it* is *legally responsible for the mix design.* Under these circumstances, we strongly encourage contractors to utilize a geotechnical engineer who is familiar with the performance features of potential mix components (e.g. if the aggregate is smaller or softer, there is more likelihood of concrete cracking).

What makes this more challenging for contractors is that most states have little or no legal specifics on *when* an implied warranty should or should not apply. As a consequence, contractors most likely will be required to piece together law from other states or federal court/board decisions to support a claim for breach of implied warranty.

Contrary to the *Cullen* decision discussed above, the Virginia Appellate Court held that the *standard* mix specifications for the Virginia Department of Highways and Transportation ("VDOT") *should* be treated as "design" requirements which the VDOT impliedly warranted. *See Chantilly Const. Corp. v. Commonwealth, Dept. of Highways,* 6 Va. App. 282, 369 S.E.2d 438, 444 (1988). Contractors will also need to understand that supportive cases may arise under project conditions completely different than a concrete paving project. *See, e.g., Ordnance Research, Inc. v. U.S.,* 221 Ct. Cl. 641, 679 (1979) (parts manufactured for vertical construction).

5. How should plans and specifications be examined when they include both design and performance requirements?

If your project is a public bid-build (as opposed to a design-build), the reality is that the plans and specifications will include a *combination of both design and performance requirements.* When design documents include both requirements, in order to determine whether there is an implied warranty, courts ask "whether the contract as a whole is more like a performance than a design contract." *See, e.g., Aircraft Gear Corp. v. Kaman Aerospace Corp.,* 856 F. Supp. 446, 452 (N.D. Ill. 1994). If the applicable contract provisions "as a whole" are "predominantly" design in character, then the owner implied warrants the design (i.e. is responsible for any extra costs and/or delay incurred to remedy the pavement notwithstanding compliance with the design). *See, e.g., Niagara County v. R & D Engineering, P.C.,* 298 A.D.2d 971, 747 N.Y.S.2d 879, 881 (2002).

As noted above, I cannot emphasis enough that important decisions that could and should apply will come from state and federal courts/boards from *outside the state where the project is located.*

6. How does a contractor prove that the design is defective and that such defect caused the problems that required remedial work?

Courts have not uniformly answered this question. Some courts have held that a contractor must prove that a specific specification was *defective* and that it *caused* the unacceptable result (e.g. cracking). *See, e.g., Coghlin Electrical Contractors, Inc. v. Gilbane Building Company,* 472 Mass. 549, 36 N.E.3f 505, 513 (2015). By contrast, other courts have held that the contractor need only show that the owner impliedly warranted that work and that "notwithstanding substantial compliance with the Government's plans and specifications the result was defective." At that point, the burden shifts to the owner to show that the defect was caused by the contractor or something outside of anyone's control. *See, e.g., Southland Enterprises, Inc. v. U.S.,* 24 Ct. Cl. 596, 600 (1991).

Courts have also not uniformly answered whether a contractor must *fully comply* with the design requirements in order to prevail in a claim for breach of the implied warranty. Some courts have ruled that it is enough that the contractor *substantially complied. See, e.g., Kordick and Son, Inc. v. U.S.,* 12 Cl. Ct. 662, 668 (1987). Other courts have held that *substantial compliance* is allowable only if the departure(s) from the design requirements were "entirely irrelevant to the alleged defect." *See, e.g., Travelers Casualty & Surety of America v. U.S.,* 74 Fed. Cl. 75, 89-90 (2006).

7. So how do I use this information to best protect myself?

As a starting point, you cannot *use* the information on *whether and to what extent there is an implied warranty for your project* unless and until you have the applicable law collected and analyzed. Given that, and how significant the costs can be for remedying a concrete pavement project, we encourage you to have an attorney collect the law and prepare a *legal memorandum* for you. Ideally, you should be able to use this on future projects as well as one you are bidding on and/or currently building.

Once you collect and analyze the applicable law, you can and should use this information in a few important respects. First, when bidding, you will have a clearer understanding on whether the owner is legally responsible for the *adequacy* of the design or you are. If, for example, the contractor is legally responsible for the mix design, the contractor should engage a geotechnical engineer familiar with the mix components (and ensure you have a written contract which clearly assigns the legal risk of the design being defective to the geotechnical engineer).

Second, during the build phase, assuming the owner should be legally responsible for the design adequacy, if defects arise in the completed pavement notwithstanding sufficient compliance with the contract, you will have a roadmap to show the owner/engineer why the contractor is entitled to both payment for the remedial costs and a time extension for any related project delays. We can say based on personal experience that contractors have been very successful using a legal memorandum to cooperatively resolve issues *on the jobsite,* not *in the courtroom.* Insofar as we have prepared and successfully used this roadmap before, let us know if we can help.

References:

1. We have previously addressed concepts related to when the implied warranty of design applies, albeit not the detailed legal level of this article. See 2018 ACPA 3rd Qtr. Magazine, "Repair of Concrete Pavement Cracking: What the Roadmap Should Be;" and 2020 ACPA 3rd Qtr. Magazine, "Do Repair Provisions Require Contractors to Accept Design Defects."

ABOUT THE AUTHOR

Thomas Olson is the founding partner of Olson Construction Law. Tom's commitment is to provide guidance on how to resolve issues on the jobsite, not in the courtroom. Tom has worked on highway heavy projects throughout much of the United States for more than thirty years. A prolific speaker and writer as well as attorney, his expertise is in concrete and asphalt paving, utility, earthwork and bridge construction, schedule analysis, material testing, and the technical and legal obligations of both engineers and contractors.