

“WHAT TO DO WHEN THE JOB GOES SOUR”

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WHO'S RESPONSIBLE WHEN THE CONCRETE JOB GOES SOUR?

I. INTRODUCTION

In many ways, a concrete job is a microcosm of construction projects as a whole. After all, just as every party to a construction contract has some involvement in the ultimate outcome of the project, success in the placement of concrete depends heavily on the work, diligence, and competence of numerous parties. Indeed, where there is failure with the concrete virtually every party involved in placing that concrete may have some responsibility, and may bear potential liability, for the concrete's defects. Hence, it is a rare situation where any one party can say with certainty that his conduct did not contribute to, or help cause, the problem at hand.

Defects discovered after the concrete work has been completed are very expensive to remedy because the cost to correct concrete work after-the-fact is inevitably far greater than what the cost would have been had the problem been detected during initial placement of the concrete. However, notwithstanding the fact that many parties may share in the blame, most construction contracts contain clauses which attempt to shift the entire risk of a concrete defect to the concrete contractor. Factual and legal liability, thus, often are two entirely different issues. Risk-shifting clauses have the effect of compounding the economic burden on those left financially responsible for repairing a bad concrete job.

Given the stakes involved, it is vital that the parties to a concrete contract, and the others involved in the work but not under contract with the concrete contractor, be in a position to recognize and manage the potential problems that may occur and effectively respond to problems and issues once they emerge. As a practical matter, this means that each interested party, whether contractually-bound or not, must recognize its own responsibilities, as well as the responsibilities and role of the other parties involved in the concrete segment of the project. The success of a concrete job clearly depends upon all parties working together, jointly fulfilling their obligations, and doing their work in a

competent and professional manner. To that end, these materials deal with the various obligations and risks which the architect/engineer, owner, general contractor, concrete contractor, testing agency, and concrete supplier have and may face in coordinating and fulfilling a concrete contract. These materials also emphasize, through use of real-life examples, both the conflicts that develop and preventative steps that construction professionals may take to limit the extent of their *financial* responsibility for correcting concrete jobs that have gone sour.

II. LIABILITY ISSUES GENERALLY

“Ready mix concrete” is a product that is delivered to a construction site in a state such that it may either be immediately pumped or placed into formwork to achieve the desired result (e.g., a slab, column, wall, footing or shape). As a product that is used to fulfill specific structural and/or aesthetic requirements, concrete is usually mandated by the project’s specifications to meet certain recognized requirements (e.g., for strength, durability, and the ability to withstand freeze/thaw cycles). These requirements are intended to ensure that the concrete is suitable for the project’s specific needs. If the requirements are not met, then failure of the concrete is likely and steps must be taken to remedy the deficiency. In most cases, this means additional work, the liability of which will be assessed to one or more of the parties involved.

Deficient concrete is usually discovered in two ways: (1) through on-site and off-site testing during the project itself, and (2) if the concrete fails, or begins to fail, (e.g. cracking, spalling, flaking or collapsing) through visual examination after the concrete is placed. For all parties, but concrete contractors especially, if there is a problem with the concrete it is far better that it be caught in the initial stages, before the pour(s) are completed and while cost-effective measures can still be taken to remedy or mitigate the problem. This fact, in turn, amplifies the importance of accurate testing and the prompt communication and review of test results by all parties.

Since the properties of concrete are, obviously, variable in nature, the concrete must be tested in some manner to confirm that it meets all of the performance

requirements detailed in the project specifications. The first question regarding the testing is usually: “*Where* will the concrete be tested?” The supplier generally wants the concrete tested as it leaves the chute (the point of delivery) because that is the last time that the supplier has physical control over the concrete. Owners, on the other hand, will usually want the concrete tested at the point of *placement*, as this location better ensures that the finished concrete will meet the required specifications. The American Concrete Institute (“ACI”) prescribes different testing methods and, in the absence of other contractual requirements, arguably sets the standards which answer the question of where the testing is to occur. While it is discussed later in these materials, for the most part ACI suggests that the concrete be tested at the point of delivery. ACI also suggests that, if the concrete is being pumped, the concrete should exceed the project requirements to compensate, for example, for the strength or slump loss that occurs by the time the concrete reaches the end of the pumpline.

The second and perhaps more important question is: “*Who* bears liability or fault if the finished concrete is defective?” Potentially liable parties who bear exposure for concrete defects include the owner, the architect/engineer, general contractor, concrete contractor, the testing agency, and concrete supplier. If the concrete contractor has subcontracted portions of the concrete work (e.g., finishing), his subcontractors are potentially liable parties too. To better tackle this “ultimate” question, however, it is first necessary to understand the duties of the different parties and the law and legal theories which undergird the ultimate resolution of the many questions that can arise in connection with concrete jobs that have gone sour.

III. IDENTIFYING THE PLAYERS

On virtually every construction job there is a “team” that must work together to achieve a successful project. As with sports teams, each construction team has players who fill very specific roles. For concrete work, the usual players are the owner, the architect/engineer, the general contractor, the concrete contractor, the concrete supplier, and the testing agency.

To use a football analogy, the owner fills the role of the football team owner -- he or she is responsible for setting the “team” goals (the completed project) and providing a budget to meet those goals. Beyond that, however, the owner’s role is more or less that of a spectator who is interested only that “his” team meets its goals.

The architect/engineer fills the role of team president. Like a president, the architect/engineer is sort of removed from the day-to-day business on the field, but is there to monitor the project’s progress for the owner. The primary concern for the architect/engineer is whether his plans and specifications are being followed by the team. If needed, the architect/engineer will get involved to periodically bless the team’s progress or to suggest alternate means of achieving the goal should problems develop that preclude sticking to the original game plan. Ultimately, the architect/engineer reports to, and is liable to, the owner in much the same way a football team president is responsible to the owner.

The general contractor is like a general manager and coach: he works for the owner, within a budget set by the owner, and must put together and inspire the disparate players that form the team. The general contractor then has to work with those players to see that they carry out the architect/engineer’s plans so that the final goals are met.

The concrete contractor is merely a player on the team. His concern is narrow, but his role vital: he must execute the plays per the architect/engineer’s plans and the general manager’s directions. If he fails to perform properly, he can delay victory and possibly drag the team to defeat.

The supplier? The supplier is also a player, a highly specialized player, whose role complements the concrete contractor. Indeed, like a good football guard, if the supplier does his job well he should not be noticed. On the other hand, if the supplier performs poorly, that poor performance can drag down the concrete contractor and have devastating consequences for the concrete work as a whole.

The testing agency is like the referees and video-replay officials. The field-tester or inspector, for example, is similar to the on-field officials: he is there to ensure the

project is played by the rules (the project specifications) and he has the ability to stop the game and force the quarterback to start over if there has been a rule violation. The testing laboratory is like the video-replay officials, only replay officials who can take twenty-eight days to examine every play and can, at any time after the game is over, reverse calls made by the on-field officials as to rule violations and, thereby, force the teams to remobilize and replay the down so that the architect/engineer's plans are followed.

When a project goes sour, there too, sports similarities exist: like a team with little chemistry the finger-pointing starts and the blame-game begins. On a concrete project, though, ultimate liability for the costs of repairing/replacing defective concrete is largely dependant on the contracts that exist between each of the players. And just as virtually all duties flow from the contract, liability tends to flow from one party to another along contractual lines. While a football coach is usually the first to go when there is trouble with the team, the general contractor may face the music first, but the hammer invariably falls on the concrete contractor.

This is because, in most cases, if a party is to recover damages it will be from a player with whom it has a contract. Thus, the general contractor will be liable to the owner with whom it has a contract and the concrete contractor will be liable to the general contractor for the same reason. A supplier, in turn, is liable to whichever party it contracted with (usually either the concrete contractor or the general contractor). The testing agency, just like football officials, mostly escapes any real exposure to liability for even gross errors, because it does not have a contract with the players, coach, or general manager, and, thus, does not generally owe those parties any duty to protect them from the economic harm caused by a bad call.

The following section examines in greater detail the individual liability and legal relationships faced by the players on a concrete job.

A. General Contractor

Under its contract with the owner, the general contractor, like the football coach, is usually the party first in line to "take the hit" and bear responsibility for

a concrete job that has gone bad. This is because the general contractor has a contractual duty to the owner to deliver a project which meets the owner's requirements as set forth in the plans and specifications. Unless the general contractor is directly at fault for the bad concrete, however, in most cases it will be able to pass the cost off to the subcontractor who installed the concrete. Thus, unless limited by contract or in a situation wherein the general contractor is factually at fault for the problem, the general contractor will try and pass the repair and related costs "down the line" to those players with whom it contracted to actually perform the concrete work. For this reason, and the legal principle called the "economic loss rule" (which is discussed in the "Damages" section of these materials), most reported judicial decisions dealing with defective concrete work do not involve owners seeking to recover damages directly from concrete contractors. Instead, the legal cases tend to involve a general contractor suing its concrete contractor, or supplier, for the costs associated with remedying the defective work, or involve a concrete contractor seeking to recover from its supplier for costs it incurred when ordered by the general contractor to fix the faulty work.

B. Concrete Contractor

While the general contractor is the first to take the hit, the concrete contractor is generally in the unenviable position of bearing the brunt of the cost for remedial work necessitated by the discovery of defective concrete. The concrete contractor, after all, has a contractual obligation to the general contractor to deliver, pour and finish concrete per the project plans and specifications (provided those documents are included as a part of the subcontract). Failure to meet that contractual obligation usually means the concrete contractor will either have to (1) remedy the work itself, or (2) compensate the general contractor for the cost the general contractor (or owner) incurred to retain a different concrete contractor to correct or fix the problem. To go back to the football analogy, this

second option (retaining a different contractor to correct your work) would be akin to a team, after a bad series of downs, withholding the starting player's salary (or cutting him) and using his money to sign a free agent to finish the game.

The scope of potential claims against a concrete contractor, however, is not necessarily limited solely to the cost of correcting defective work. If the defective work, for example, impacts the progress and/or sequence of construction on the project, the responsible party may be faced with claims by the owner or general contractor for reimbursement of delay-related costs.

While the concrete contractor's liability to the general contractor is usually clear, the liability of the other parties to the concrete contractor is not so clear. Indeed, normally the only player the concrete contractor can pursue for contribution is the supplier. The supplier, however, is a difficult target for the concrete contractor to hit because the supplier occupies a relatively protected position thanks to (a) the *Uniform Commercial Code*, and (b) the supplier's usual superior bargaining power to insist that the concrete contractor use the supplier's contract forms (which typically exclude all implied warranties) when buying the concrete. The architect/engineer and tester are even more immune from suit by the concrete contractor because of the economic loss rule, which prohibits a party from recovering economic damages from another party unless he or she has a contract with that party.¹section, *infra*.

C. Concrete Supplier

Concrete suppliers are responsible for supplying concrete that meets or exceeds the specifications provided by the party – usually the concrete contractor – with whom the supplier is contracting. If the project specifications require concrete with certain features, e.g., percentage of cement, or admixtures, and the concrete contractor includes those specifications as part of its contract with the

¹ As mentioned before, the economic loss rule is discussed in greater detail in the “Damages”

supplier, the supplier must supply concrete meeting those specifications. Supplying “functionally equivalent” concrete may not be good enough unless the contract between the supplier and the concrete contractor gives the supplier latitude to do so.

Given the supplier’s superior knowledge as to exactly what is in the concrete mix it is delivering to the site, a supplier may, in some circumstances, be held to a *higher* standard than, say, the owner, general contractor or concrete contractor who purchases the concrete. This higher standard would be imposed when the court finds that the supplier has *impliedly warranted* that the concrete is (a) fit for its intended purpose, or (b) merchantable.² Like the concrete contractor, if the supplier is found to be liable for the fact that the concrete ultimately needs repair or replacement, the supplier faces the risk that it will have to pay *all* costs of repair related to the defective concrete. This is so even though such remedial costs may vastly exceed the contract price the supplier received for supplying the concrete.

EXAMPLE:

In a case called *Herlitz Construction Company, Inc. v. Clegg Concrete, Inc.*,³ the Louisiana Court of Appeals held a concrete supplier liable for damages resulting from concrete which did not have a compressive strength of 3,000 pounds per square inch (P.S.I.) *even though it was unclear whether the P.S.I. specification was ever communicated to the supplier.* In the project at issue, the Herlitz Construction Company (“subcontractor”) was hired to perform the foundation work for a structural connection between several shops at the Cortana Mall in Baton Rouge, Louisiana.

² The implied warranty of fitness for a particular purpose is discussed later in these materials, at “Warranties.”

³ *Herlitz Constr. Co., Inc. v. Clegg Concrete, Inc.*, 378 So.2d 1002 (La. App. 1979).

The subcontractor entered into a verbal contract with Clegg Concrete, Inc. (“Clegg” or “supplier”) for Clegg to supply the concrete for the subcontractor to use in constructing certain support pilings, or caissons. While the subcontractor’s subcontract with the general contractor called for the caissons to have a compressive strength of 3,000 P.S.I., there was conflicting testimony about whether that requirement was conveyed to the supplier. In any event, the subcontractor’s order clearly specified the concrete was to be “five bag, with air-entrainment, [and a] slump of three inches.” The court found that this specification should have yielded concrete having a 3,000 P.S.I. compressive strength.⁴

However, testing of cylinders taken from each of the supplier’s concrete trucks revealed that one of the trucks delivered a load of concrete which had a compressive strength of only 1,500 P.S.I. to 1,700 P.S.I. This finding was confirmed by further testing of core samples obtained directly from the caissons.⁵ Based on the test results, the general contractor ordered the subcontractor to install additional sister footings to help distribute the weight supported by the caissons containing the deficient concrete.

After performing the work ordered by the general contractor, the subcontractor sued the supplier to recover the expenses incurred for the corrective work. Those expenses included not only the subcontractor’s labor and material, but costs for: (1) related remedial work; (2) additional coring, testing and analyzing the defective concrete; (3) redesign of the drilled footings; (4) delay costs; (5) costs for supervision (by the general contractor) of the corrective work; and (6) costs of extra dirt fill needed due to the delay.

⁴ Id. at 1003-1004.

⁵ Id. at 1004.

At trial, the court found that the supplier was responsible for the deficiency in the compressive strength of the concrete and awarded substantially all of the damages claimed by the subcontractor, excluding only the costs of the general contractor's supervision.⁶ The appeals court agreed, noting the "well-settled" principle that "where remedial work not contemplated by a subcontract is required to complete a project in accordance with specifications, *the cost of such remedial work must be borne by the party at fault.*"⁷ Since there was sufficient evidence that the corrective work was ordered in response to the test results indicating a deficiency in the compressive strength of the concrete and since there was nothing in the record indicating that the remedial repairs were unnecessary or unreasonable, the subcontractor was allowed to recover all reasonable costs related to the repair work necessitated by the deficient concrete.⁸

D. Architect/Engineer, Inspector and Testing Agency

In the vast majority of states, an architect/engineer, inspector or testing agency will only be liable for errors they make regarding specifications, erroneous testing, or erroneous acceptance of nonconforming concrete to the party with whom they have privity. "Privity" is the legal term or concept which refers to the direct relationship between the parties which grows out of a contract agreement between them.⁹ Thus, in most cases, an architect/engineer, inspector, or testing agency will only be liable to the person who contracted for their services, usually

⁶ *Id.* at 1004. The trial court also modified the subcontractor's claim for the cost of testing and analyzing the defective concrete and held the supplier responsible for only \$360 (about 22%) of the \$1,636 testing costs claimed.

⁷ *Id.* (emphasis added)(citing *Alumaglass Corp. v. Administratrix of Succession of Kendrick*, 303 So.2d 911 (La. App. 1st Cir., 1974)).

⁸ *Id.* at 1006. The appeals court did reduce the damages somewhat, finding that evidence of certain costs allegedly incurred by the subcontractor to third-parties was not properly introduced. The appellate court, however, did not preclude the subcontractor from recovering those damages, it merely remanded the case so that the subcontractor could submit additional evidence to the trial court to verify the reliability of the damages it claimed, but did not properly authenticate.

⁹ Parties that do not have a contract agreement between them are sometimes referred to as "non-privies."

the owner. This means that concrete contractors or suppliers who may have relied on the expertise and/or actions of the architect/engineer or testing agency and who arguably may suffer damages due to a defective concrete specification, mix design or erroneous testing, are generally barred from seeking reimbursement for those damages because they have no contractual relationship with the architect/engineer or testing agency. This topic is discussed later in these materials, at the “Damages” section.

IV. RESPONSIBILITY FOR THE CONCRETE DESIGN

On many projects, the concrete section of the specifications details the performance requirements which the concrete is expected to have in-place. These often include compressive strength, air-entrainment and certain other technical features. Specifications often leave it up to the concrete contractor to select the components which, when properly mixed, will produce concrete which meets the requirements of the specification in terms of the designated technical features.

In such cases, the concrete supplier is given the opportunity, owing to the nature of the concrete specification, to propose a concrete mix design which the supplier believes will attain the desired result. In this fashion, the concrete supplier can utilize products, some of which may be proprietary, which will achieve the technical features of the concrete as specified. Often, in submitting the proposed concrete mix design, the supplier provides historical test results which purport to show how the components of his mix design will achieve the requirements of the concrete specification.

In concrete projects such as these, the supplier will provide technical literature in support of his concrete mix design for review and approval by the architect/engineer. The architect/engineer’s response usually is made in the form of a transmittal and the architect/engineer’s “stamp” on the submitted concrete mix design. The stamp often is worded so as to disclaim any responsibility which the architect/engineer may have or assume in reviewing the concrete mix design proposed by the supplier.

Concrete specifications which allow the supplier to design the concrete mix for approval by the architect/engineer pose unique risks to the concrete contractor. The principle risk is that the supplier's mix design will prove to be ineffective and that the architect/engineer's approval of the design will not amount, legally at least, to an acceptance of the design which binds the owner. If the design fails and the concrete is defective, the concrete contractor cannot defend on the basis that the mix design was approved. Instead, the concrete contractor must pursue the concrete supplier for damages. However, as seen elsewhere in these materials, the supplier may have a number of good defenses, for example, the disclaimer of warranties in the supplier's standard form contract with the concrete contractor and/or a limitation on the recovery of consequential damages.

In situations where the concrete specification calls for, or allows, the concrete supplier to propose a mix design, the concrete contractor should attempt to have the design unequivocally accepted by the architect/engineer before the concrete is delivered. When delivered, the concrete must be tested to ensure that what is delivered comports with the design, as well as with the technical features of the specification.

Where the concrete specification itself contains the components of the concrete mix and no latitude is allowed by the specification for varying the components, the concrete contractor has less risk as long as the specified mix in fact is supplied. If there is a defect in the mix then under ordinary principles of construction contract law, e.g., the Spearin doctrine, the concrete contractor will have a remedy ultimately against the owner for providing a defective concrete mix design.

V. CONCRETE TESTING: POINT OF DELIVERY OR POINT OF PLACEMENT?

A. General Practice

1. The Contract Documents Govern

As noted in the introduction, where to test the concrete is a frequent question. For any contractor, subcontractor, or supplier delivering or placing concrete, the contract documents are the touchstone which governs the standards the concrete must meet. If a contractor provides concrete which does not meet the requirements set forth in the contract documents, that contractor will have breached his contract and is potentially liable for all costs associated with remedying the breach (including removal and replacement costs). This is true even if the concrete otherwise would be perfectly acceptable (under ACI standards, for example) for the conditions in which it is installed. In short, what is in the contract documents should be in the concrete.

If the contract documents do *not* specify where the concrete should be tested, the question becomes more one of convenience (e.g., it is easier to test at the chute). However, given that no matter where the test is taken, the final concrete must still meet the specifications, contractors should (1) recognize that *where* the test occurs affects the field test results, and (2) if testing at the point of delivery, be prepared to compensate for any slump, strength, air-entrainment or other loss that occurs to ensure that, in the final analysis, the concrete meets the required standards.

2. Fallback: ACI Standards

Many concrete specifications incorporate ACI standards. Hence, when the contract documents fail to mandate specific standards regarding the concrete, ACI standards remain perhaps the best reference for a contractor to rely upon to ensure that the concrete delivered complies with industry standards and satisfies any implied warranties of fitness for intended use

or apparent purpose. Take, for example, a contractor who is providing concrete for an outdoor parking garage in a climate where freezing and thawing can reasonably be expected to occur. If the contract is not clear (or is silent) as to some or all of the properties which the concrete must have, the contractor is well-advised to provide concrete meeting ACI's standards for such climatic conditions. If the contractor does not do so, he may well find that he is responsible, under a general standard of care, for any damage that results from placing concrete that would not meet at least ACI standards for the expected and apparent use of the concrete, i.e., in an outdoor structure exposed to the elements.

a. ACI generally

ACI 301-96 prescribes different handling requirements which depend on the type of concrete being poured. In turn, ACI frequently refers to ASTM standards. Most all the standards and specifications ultimately pertain to the concrete's strength and resiliency and are designed to ensure that the concrete will withstand the conditions of its intended use. For purposes of these materials, three of the more pertinent requirements are those which deal with slump, air-entrainment and temperature.

b. Definitions

Slump - The measure of consistency of freshly mixed concrete; the "slump test" is a simple way to determine concrete consistency against known standards and provides a useful indication of consistency and, with certain mixtures, also of workability. Essentially, the test is performed by filling a 12-inch high "slump cone" with freshly mixed concrete in three layers. Each layer is then tamped 25 times. When filled, the top of the cone is struck off and the mold lifted. The amount which the mass settles when the mold is removed is the "slump." As such, a small slump (e.g., 1 inch) indicates a stiff consistency while a large slump (e.g., 8 inches) indicates a very wet, almost soupy, consistency.

Air-Entrainment - The incorporation of air, through the use of an air-entraining admixture, in the form of minute bubbles –generally smaller than 1 mm-- during the pre-placement mixing of concrete. Air-entrainment is usually used to increase the concrete’s workability and frost resistance. The air-entraining admixture may be added to the concrete during its manufacture or during the actual batching and mixing operation. Air-entraining works principally because the closely spaced open-air bubbles retard the entrance of water into the concrete. This, in turn, provides relief from the pressure which builds up when water in the capillary channels of the hardened concrete paste freezes. In this way, air-entrainment prevents damage to the hardened paste structure during freezing and thawing periods.

Temperature - This generally refers to the temperature of the concrete as *delivered*; while there is a fairly broad range of temperatures which ACI envisions/permits, ACI requires the concrete be placed at certain minimum temperatures (measured at placement) to ensure the concrete’s integrity is not compromised. ACI also sets an upper limit for concrete temperature as delivered (90° F); the term “hot cement” refers to the circumstance which usually occurs during the summer when the combination of hot materials (generated by the grinding of the cement) and hot weather results in the concrete going in place much hotter than usual, which means more evaporation and more rapid hardening, and affects the tempo of job operations necessary to obtain proper finishing. Because of the small weight ratio of cement to total concrete, the temperature of the cement is a relatively minor factor in the temperature of the concrete, but nevertheless some specifications (but not ACI) now require cement to be less than 170° F when delivered to the job.

c. ACI standards for different types of concrete

ACI has a variety of standards which apply to the quality, properties and placement of concrete. These provisions include:

- | | |
|----------------------------------|---|
| 301 § 4 “Concrete Mixtures” | 301 § 5 “Handling, Placing, and Constructing” |
| 301 § 6 “Architectural Concrete” | 301 § 7 “Lightweight Concrete” |
| 301 § 8 “Mass Concrete” | 301 § 9 “Prestressed Concrete” |

The “Concrete Mixtures” section is the standard which generally applies to the broadest range of concrete applications. Thus, unless

otherwise noted, ACI standards referred to in these materials will be those from ACI 301 § 4, “Concrete Mixtures.”

B. Slump: Where to Test

ACI 301 § 4.2.2.2 (“Concrete Mixtures”) suggests that slump be tested “*at the point of delivery . . .*”

ACI also recognizes, however, that at times “it might be necessary . . . to specify that slump of concrete be determined at the point of placement rather than at the point of delivery.” For example, if the contractor has to pump the concrete, most industry standards suggest that the slump be measured at the end of the pumpline to preclude problems encountered with slump loss during pumping. The practical effect of slump loss during pumping is that a contractor who has to pump concrete should require the concrete, if measured at the point of delivery, to have a *smaller* slump than specified by the contract documents. This will compensate for the fact that by the time the concrete reaches the end of the pumpline it will have lost slump from where it was tested.

ACI suggests that a concrete contractor determine the extent of slump loss during pumping to enable him to decide whether to accept or reject the concrete based on the slump of the concrete at the delivery point. “For example, if a 1_ in. slump loss during pumping has been established and confirmed by comparative testing, then the slump can be measured at the point of delivery to meet a 5_ in. slump in order to meet the 4 in. slump requirement at the point of placement at the end of the pumpline.”¹⁰

If a question ever arises as to concrete performance requirements, the concrete contractor should not hesitate to use the tools available in the industry, including ACI, and the experience of concrete and admixture suppliers. Notwithstanding that help, however, contractors should always understand that the ultimate success or failure of the concrete rests with them.

¹⁰ ACI § 301-96 notes.

PRACTICAL POINTERS

L Obtain and be familiar with all contract documents affecting your work (plans, specifications, addenda, etc.). Look for job requirements your field people should be aware of and ensure that your field representative is well-versed with these requirements. Important requirements include: What is your scope of work? Are you responsible for testing? Layout? Form work? Hot and/or cold weather protection of the concrete? Look for the required type and strength of the concrete. Look for the conditions under which the concrete will be poured (winter?/summer?/will there be pumping?) Have conditions changed since you signed the contract due to delays caused by others? Also be aware of the project schedule and the circumstances in which the general contractor can supplement your workforce or require you to work overtime to meet the schedule.

L Make sure you are aware of potential problems that may occur due to work conditions, job-site, and/or the general contractor's schedule that may increase your costs (i.e., is there a chance there may be poor access, are many trades working in a confined area, or is there the possibility that the concrete may have to be pumped?).

L Finally, be familiar with the contractual hoops you must jump through in order to protect your right to claim for extra costs or time (notice requirements: written notice? two days advance notice? etc.). Fully documenting your extra costs and promptly submitting accurate and detailed claims increases the likelihood of successful recovery and precludes needless post-completion disputes about costs and the impact of disruptions and/or extra work.

C. Air-Entrainment: Where to Test

ACI 301 has a host of requirements which pertain to air-entrainment. Notably, however, ACI 301 suggests that if the contract documents do not specify where to test, concrete mixtures which require air-entrainment admixtures should be tested for air content “*at the point of delivery.*” Additionally, ACI 301 suggests that the air-entrainment levels be based on ACI table 4.2.2.4 requirements for severe exposure concrete. Indeed, ACI 301 § 4.2.2.4 (“Concrete Mixtures”) provides that “[u]nless otherwise specified, *concrete shall be air-entrained.*”

ACI provides tables for the total air content of concrete for various sizes of coarse aggregate (4.75 mm or larger pieces of granular material, such as sand, gravel, crushed stone, crushed hydraulic-cement concrete, or iron blast furnace slag that is combined with a hydraulic cementing medium to produce concrete) and sets requirements which the architect/engineer must follow if the concrete mixture is for *other than* severe exposure.¹ Unless otherwise specified, ASTM C 231 (Test

¹ See e.g., ACI Table 4.2.2.4.

Method for Air Content of Freshly Mixed Concrete by the Pressure Method) is to be used to provide the proper measurement of the concrete's air content. As with the slumping requirement, the section notes that if the concrete is being pumped *“it may be necessary . . . that air content be measured at the point of placement to account for loss of air content during pumping.”*

D. Temperature

1. Generally

Temperature, both temperature of the concrete and the outside environmental temperature, has a great effect on the success of a concrete pour. If concrete is poured in weather that is too hot, or too cold, the quality of the concrete will be adversely affected. Similarly, concrete that itself is too hot or cold will be compromised. There are, however, numerous precautions and steps a concrete contractor can take to mitigate the effects of adverse weather on concrete, and contractors should check with suppliers (regarding possible admixtures) and with ASTM and ACI standards for instruction on what can be done to ensure the most successful pour possible in such a situation.

2. **Hot and Cold Weather Concrete Operations**

Legally speaking, installing concrete in weather extremes (hot or cold weather) is not a good idea and should never be done. Practically speaking, however, there will be times when job conditions (and the general contractor's schedule!) force the concrete contractor to pour in less than ideal weather.

ACI 306 defines "cold weather" as "a period when for more than 3 successive days the mean daily temperature drops below 40 degrees [F]ahrenheit." Normal concreting practices can be resumed once the ambient temperature is above 50° Fahrenheit for more than half a day.

What happens in cold weather, essentially, is that the lower temperature slows the chemical reaction necessary to transform the concrete from a liquid state to a solid material. As a general rule, concrete needs to harden, or set, at a fairly quick pace to resist water pressure that may build up and freeze. If the temperature drops too close to freezing, hydration slows to nearly a standstill and the concrete will not set. Additionally, the concrete must reach a minimum strength of 500 PSI to resist the effects of freezing. If freezing occurs, the concrete can, in fairly short order, begin to crack, spall and scale.

If outside temperatures are expected to rise above 90° Fahrenheit for any significant length of time over a three-day period, ACI suggests that concrete not be poured. Concrete poured in hot weather runs the risk of setting too quickly as water evaporates in the heat. Adding water to the concrete mix, however, is not an attractive alternative as the extra water can adversely affect the hardened concrete and result in (a) decreased strength; (b) decreased durability and water-tightness; (c) increased possibility of drying shrinkage cracking; and (d) a distressed nonuniform surface.

Despite these problems, in high temperature climates, concrete pours in hot weather are virtually a given. Thus, construction professionals have developed certain techniques designed to preserve the integrity of concrete and mitigate the effects of hot weather on freshly-poured concrete. Despite the many preventative steps that can be taken to lessen the chance of failure for liability purposes, it is vital that contractors take all reasonable precautionary steps when pouring in hot (or cold) weather to ensure that they do not, in their haste to finish the job, create additional exposure to liability and incur extra and unnecessary remedial costs.

PRACTICAL POINTERS

L If weather conditions mandate against a pour you should so advise the owner or general contractor and then document your recommendation and the reasons for it in writing (this can be as little as a two-sentence letter or a notation on the daily reports). If ordered against your advice to proceed with a pour, protect yourself against a later claim by giving proper notice (as defined in the contract documents) regarding your concerns and explicitly stating in your notice (preferably in writing) that you are waiving all expressed and implied warranties of any concrete work performed during the adverse weather.

VI. LIABILITY FOR DEFECTIVE CONCRETE

Generally, problems with concrete work appear in three typical situations. The first situation is the patent (obvious) defect related to the concrete pour itself. An example of this situation would be if the concrete was poured in hot weather and set too quickly, resulting in an uneven surface. In this situation, the concrete contractor is generally liable for all costs resulting from the defective work, including remedial costs. A possible exception exists where the concrete contractor was ordered to proceed with the pour despite giving notice that pouring in adverse weather was not advisable. In that case, the concrete contractor can argue that he is relieved from liability and make a claim to recover the costs of the remedial work.

The second situation is where tests on the concrete reveal that the concrete is deficient in some respect. Given how concrete tests are performed, this sort of problem can appear either in the field, relatively concurrent with the concrete work (e.g., slump or air-entrainment tests), or in the laboratory at certain intervals, up to twenty-eight days after the concrete has been placed (e.g., compressive strength tests). In this second situation, potentially liable parties include: (1) the concrete contractor, who may have improperly placed the concrete; (2) the architect/engineer who designated the concrete mix specifications; (3) the supplier, who may have provided a nonconforming concrete mix or defective concrete; and (4) the testing laboratory, who may be liable to the owner (but generally not to the general contractor or concrete contractor) if it negligently failed to detect and/or stop the installation of defective concrete.

The third situation is where the concrete itself begins to display signs of failing. This, too, can occur relatively quickly and before the project is complete, as with certain types of cracking, spalling or flaking, or it can take longer to appear, as is often the case with problems that occur because of defects in the concrete mixture but which may have been missed at the testing stage, such as a lack of air-entrainment. Potentially liable parties here include virtually everyone involved in the concrete work for the reasons described in the previous paragraph.

The one constant with a concrete defect, however, is that nobody wants to pay for the costs associated with fixing the problem and, particularly when the problem is not caught at the field testing stage, those costs often are tremendous. The following section deals with the types of problems which occur, the questions that may arise regarding who may be liable, and the types of damages which are, or may be, recoverable.

A. Certification of Concrete Tester and Testing Agency

If the contract specifications or local building codes require the concrete inspector or testing agency to be properly certified, one question if the concrete fails or otherwise proves noncompliant is whether the inspector who tested the concrete actually *was* certified to do so. Generally, for quality control purposes, there are certain accreditation requirements for (a) laboratories which test concrete for compliance with project specifications, and (b) the technicians who perform the tests, both field and laboratory technicians. ACI has a two-tiered certification process for field and laboratory testers, which it terms as “Grade I” or “Grade II” levels.

Despite the certification process, it is rare in the heat and excitement of a concrete pour, for anyone in the field to demand to see a tester’s qualifications. Whether the tester, or the testing agency, was certified and the tests properly administered is undoubtedly a concern which can and should be raised in the event the concrete ultimately proves defective.

EXAMPLE:

One reported case indicates that when a certified technician is required by contract, a testing agency’s use of a non-certified technician is relevant to the apportionment of damages if that technician erroneously approves the use of concrete which later proves defective. Saunders Concrete Co. (“Saunders” or “plaintiff”), entered into a contract with the Tri-State Design Construction Co. (“Tri-State” or “defendant”) for Saunders to provide concrete at a certain slump and in accordance with specified ASTM standards regarding the concrete’s compressive strength.² Tri-State then entered into a contract with Atlantic Testing Laboratories (“Atlantic”) whereby Atlantic agreed to provide an *ACI-certified technician* to inspect, test, and approve or reject the concrete provided by Saunders.

² *Saunders Concrete Co., Inc. v. Tri State Design Constr. Co, Inc.*, 899 F. Supp. 916 (N.D. N.Y. 1995).

Unfortunately, the concrete poured by Saunders lacked the compressive strength required by contract. The court determined the concrete's lack of strength was probably due to the addition of too much water in the pouring stage. As a result, the concrete had to be removed and replaced. Shortly after the problem surfaced Tri-State learned that the Atlantic technician who approved the use of the additional water was *not* ACI-certified. In spite of this information, Tri-State withheld Saunders' contract balance to pay for the remedial work. When Saunders initiated a lawsuit against Tri-State to recover its contract balance, Tri-State counterclaimed and moved to join Atlantic as a third-party defendant, alleging that its loss resulted in part from the actions of the uncertified Atlantic technician. Tri-State alleged that the technician improperly tested the concrete and failed to discover the defect, which caused the bulk of Tri-State's loss by precluding Tri-State's ability to mitigate the damage at a time when it would have been more cost effective to do so.

The court granted Tri-State's motion to add the testing agency to the lawsuit, holding in part that the issue regarding the tester's qualifications related to the resulting damages. Moreover, the court indicated that whether the concrete was clearly defective at the time of delivery (because too much water was added) and whether that defect should, or would, have been reasonably apparent to a properly certified technician was a proper question of law or fact.

While the case subsequently settled, the court's apparent willingness to consider the testing agency's breach as a cause of the resulting damages indicates that concrete contractors who arguably suffer harm resulting from negligent or improper testing may have some recourse against the party who was obligated to provide the certified tester so long as they have the contract with the testing agency.

B. Is There a Duty to Test?

1. Contractual Duty

As a general rule, the duty to test the concrete only arises as a result of a contractual relationship which imposes this obligation on one of the parties. In other words, if a concrete contractor's contract contains a provision requiring him to test the concrete to ensure that it meets the specifications, the contractor is obligated to do so. Normally, however, the contractual duty to test will be separately delegated by a contract between someone other than the concrete contractor (usually, the owner) and a third-party testing laboratory or agent. In this manner, the testing is ostensibly performed by a party with no direct stake in whether the concrete meets (or fails to meet) the specifications. Theoretically, an independent tester's only concern should be whether the concrete meets the contract specifications. Thus, independent results of tests on the concrete are viewed as more reliable than if the testing agency worked directly for the contractor who bears the largest financial stake in having to remedy the work if it is found to be defective.

2. No Independent Implied Duty to Test

There is really no independent implied duty to test the concrete on the part of the concrete contractor because the duties imposed on each party largely flow from their respective contractual responsibilities. For example, while the concrete contractor may be responsible for providing concrete that meets ACI requirements, that requirement is only to actually *provide an end-product* meeting applicable ACI standards. Failing to test the concrete as it is poured should not be, absent an express contractual requirement to test, a breach by the concrete contractor. However, if the *result* of the failure to test is that the concrete does not meet the required specifications, then the contractor *has* breached its contract. The breach, however, (and the contractor's responsibility for the costs associated with remedying the breach) flows not from the failure to test (which may have

been a contributing factor to the breach) but from the failure to provide concrete which meets the contract specifications.

C. Implications of Failure to Test or Erroneous Test Results

As noted above, unless required by contract, the failure to test should not be a breach in and of itself. The implications of the failure to test (or erroneous test results), however, do bear potentially enormous costs associated with remedying problems that arguably flow from the failure to test (or erroneous testing). In other words, while failing to test, or negligently testing, may not be a breach *per se*, if the concrete ultimately proves defective, the contractor probably bears the brunt of the costs associated with remedying a concrete problem that might never have arisen had the testing been performed properly.

PRACTICAL POINTERS

L Even if not explicitly required to do so by contract, concrete contractors may want to consider retaining a quality control engineer (or independent testing laboratory or tester) to separately analyze and test the concrete to ensure that it complies with contract requirements. If the independent tests catch a problem that was missed by the owner's or general contractor's testing, the concrete contractor may save himself much greater expense down the line. Additionally, if your tester has results showing compliance with requirements and the owner/general contractor's tester rejects the concrete, a question of fact may arise as to the necessity of removing and replacing the concrete and you may be able to later recover your costs on the grounds that the extra work was unnecessary.

1. Is the Damage Covered by a Warranty?

a. Warranties generally

Warranties are an obvious area where a concrete contractor may remain liable for concrete that fails to meet contract requirements. The term "warranties" encompasses not only written (contract) warranties, but implied warranties which are grounded in negligence, product liability, strict liability, and combinations of all the above. The way a warranty is interpreted, perhaps more so than any other area of construction law, is highly

dependent on the state law that applies and, thus, warranty “rules” are not easily reduced to a set of guidelines that are generally applicable to all jurisdictions.

b. Express warranties

Generally speaking, most warranty repairs relating to defective concrete will arise out of express warranties given, by contract, from the contractor performing the concrete work, or the supplier furnishing the concrete (the “warrantor”), to the party who is purchasing the concrete or concrete work (the “warranty”). The AIA General Conditions (AIA Document A-201, 1997 Edition), § 3.5.1, for example, require that the contractor warrant that the materials he uses will be of good quality and new, that the work will be free from defects not inherent in the quality required or permitted, and that the work will conform to the requirements of the contract.

In this situation, the concrete contractor is essentially only warranting his own workmanship, i.e., that he will provide a specific standard of performance judged mainly on whether the work comports with the plans and specifications. Thus, under A-201 § 3.5.1-type warranties, if any defects arise that are a result of the contractor’s performance (as opposed to being caused by defective concrete specifications), the contractor will be responsible for correcting the problems.

Because express warranties are contractual in nature, if the work warranted is not achieved there is a breach of warranty regardless of whether the contractor was negligent and, at minimum, the warrantor will usually be obligated to remedy the noncompliant work. It is important to understand the distinction

between an express warranty of the *quality of materials or performance* and an express warranty that a specific *result* will be achieved by the promisor. The former is a typical warranty. The latter, however, is more properly described as a “performance specification” which some courts consider a contract term describing the scope of work and not an express warranty.

EXAMPLE:

The California Court of Appeals held that a concrete contractor who guarantees only his workmanship and does not guarantee a *result*, cannot be held liable for a later failure of the concrete so long as the contractor complied with the plans and specifications and installed the concrete in a workmanlike manner.¹

In that case, a concrete contractor brought suit to recover the balance due on his contract to perform concrete work on a building in San Francisco. The contractor’s contract required him to “perform and complete in a workmanlike manner” virtually every aspect of the concrete work, including all floor and roof slabs “shown and described in the architect’s plans, drawings, and specifications.”² Under the contract, the contractor could not be paid unless he first obtained a certificate from the architect that the payment requested was due and the work completed.³

The contractor completed its work entirely in accordance with the plans and specifications and installed the floor slabs under the inspection, direction and supervision of the architect.

¹ *Roebing Constr. Co. v. Doe Estate Co.*, 165 P. 547 (Cal. App. 1917).

² *Id.* at 547.

³ *Id.* at 548.

Accordingly, the architect approved the work and issued the proper certificates affirming that the contractor was entitled to payment for the work billed. Several months after completing the work, however, the top cement finish began to crack, check, and loosen from the slab upon which it had been applied. The problems worsened until they affected approximately fifty percent of the top cement finish of the floor.

The contractor returned to the job-site and, under the supervision and blessing of the architect, removed the cracked cement and replaced it with the same materials, in the same proportions, and in the same manner as required by the original specifications. The new coating, however, failed to unite with the slabs. Once again, the concrete deteriorated to the point that about fifty percent of the floor was cracked.

The owner refused to pay the balance due the contractor and, when the contractor sued, the owner counterclaimed for certain delay and repair costs it incurred. In total, the owner's claim exceeded the balance owed the contractor. The trial court found, however, that the concrete defects were caused not by any act or omission of the contractor but by "the improper mixture of gravel and cement, said gravel and cement having been mixed and laid down by [the contractor] in the proportion . . . required by contract."⁴

On appeal, the California Appeals Court noted that the contractor had warranted its work, not the result of its work. Specifically, the court stated that the concrete contractor completed

⁴ Id.

its work “precisely as it had agreed to do it and, unless . . . the plaintiff guaranteed the work to *result* in a perfect floor, it seems to us that defendant ought not to be permitted [to avoid paying the contractor for its work]. He [the contractor] did not contract for result, but only to do the work in a specified way.”⁵ As such, the contractor was entitled to full payment of his contract balance.

The result in this case is very similar to what could be expected in most jurisdictions in the United States. That is, so long as the contractor performs his work in accordance with the plans and specifications provided by another, he will not be liable for defects that occur as a result of defective plans and specifications. Note that in this situation, the owner, in a sense, is liable to the contractor for the repair costs. This is very similar to the situation where a general contractor is liable to the owner for a subcontractor’s non-conforming work. In both cases, the party immediately liable (the owner or the general contractor) has recourse to recover those costs from the ultimately responsible player (the architect or the subcontractor) so long as there is a contract (privity) between the players.

c. Implied warranties

In construction, “implied warranties” are warranty obligations that courts impose as a by-product of the mere fact that a construction contract exists. Courts recognize such warranties to ensure that a construction professional’s work, or the concrete furnished by the supplier, achieves a minimum level of reliability. These obligations exist outside any contract and irrespective of the

⁵ *Id.* at 551. (emphasis added).

parties' intent. In general, the implied warranties relevant to concrete work are (1) the implied warranty of workmanlike construction; (2) the implied warranty of fitness for a particular purpose; and (3) the implied warranty of merchantability.⁶ The "merchantability" warranty applies solely to suppliers (under the Uniform Commercial Code). Under the implied warranties, concrete contractors and suppliers essentially have a duty to exercise reasonable care to avoid foreseeable harm, economic and physical, to the party receiving the benefits of the contractor's or supplier's work.

The standard for proving a claim under an "implied warranty," particularly the warranty of workmanlike construction, actually is more analogous to the standard needed to make a negligence claim rather than a claim under a "true" warranty. This is so because liability under an implied warranty depends on the conduct of the implied warrantor rather than the end result. In other words, where the focus under a "true" warranty is whether the structure meets the expected warranty standard, the principle function of the implied warranty is to ensure that the warrantor made a "proper effort," in conformity with the recognized standards of his profession, to carry out his obligations under the contract. The end result --whether the concrete proves deficient in some area-- is almost irrelevant for purposes of the implied

⁶ In residential construction work, there is also the "implied warranty of habitability" which applies to the overall construction of the home in general and is concerned with whether the home is fit for human habitation. The implied habitability warranty is thus less applicable when the focus is narrowly drawn to the fitness of the concrete work alone. If the concrete work is so poorly performed that it renders a dwelling uninhabitable, there will, obviously, have been numerous defects in the performance of the work and probably breaches-of-contract to boot. For those reasons, these materials will not discuss the implied habitability warranty.

warranties so long as the contractor made a “reasonable effort” to fulfill his duties.⁷

d. Implied warranty of workmanlike construction

The implied warranty of workmanlike construction provides an owner with an action against a contractor if the contractor’s work is not of good quality, free from defects, and in conformance with the contract documents. The warranty runs alongside of and in addition to express warranties that may exist under the parties’ contract.

While the exact parameters of the implied warranty of workmanlike construction are hard to define, the Texas Court of Appeals defined the warranty as “the manner in which an ordinarily prudent person engaged in similar work would have performed under similar circumstances.”⁸ The Texas court explained that imposing the warranty is not unduly burdensome because it merely imposes on a contractor a duty to act as an ordinary and prudent contractor would.

e. Implied warranty of fitness

The implied warranty of fitness for a particular or intended purpose applies to most concrete contractors and suppliers and warrants that the materials supplied, e.g., concrete, cement, admixtures or aggregates, are impliedly represented to be fit for the purpose for which they are sold. The implied warranty of fitness, then, allows purchasers of concrete (owners, general contractors or concrete contractors buying from suppliers) some degree of

⁷ See e.g., Jones, William K. *Economic Losses Caused by Construction Deficiencies: The Competing Regimes of Contract and Tort*, 59 U.Cin.L.Rev. 1051, at 1059 (1991).

⁸ *Granbury Properties, Inc. v. Arnold*, 843 S.W.2d 108 (Tex. App. 1992).

protection to rely on the representations of their contractors and suppliers, who presumably have superior knowledge about the product, as to the quality of what they are purchasing, and with regard to any representations the concrete contractor or supplier may make as to the qualities or performance characteristics of the concrete or the admixtures, aggregates or other components of the concrete. For the implied warranty of fitness for an *intended purpose* to apply three facts must exist:

1. The seller must have reason to know the buyer's particular purpose;
2. The seller must have reason to know that the buyer is relying on the seller's skill or judgment to furnish appropriate goods; and
3. The buyer must, in fact, rely upon the seller's skill or judgment.⁹

In a dispute involving concrete work, one court used the above three factors in finding that the implied warranty of fitness for an intended purpose applied only if the concrete supplier knew (or should have known) that the concrete it was selling would be put to a purpose other than "general" construction.¹⁰ In that case, the general contractor, Diamond Surface, Inc. ("Diamond" or "concrete contractor"), brought suit against the South Dakota State Cement Plant Commission ("SDCP" or "supplier"), alleging that SDCP supplied defective cement which resulted in the premature drying or stiffness of concrete paving for a project along South Dakota's Highway 18.

⁹ James J. White & Robert S. Summers, *Uniform Commercial Code* § 9-10 (4th ed. 1995).

¹⁰ *Diamond Surface, Inc. v. State Cement Plant Commission*, 583 N.W.2d 155 (S.D. 1998).

In the bidding phase, rather than submit its own concrete mix design, Diamond selected a mix design that was already tested and pre-approved by the State Department of Transportation (“DOT”). Diamond also opted to substitute fly ash for a portion of the cement (fly ash has binding qualities similar to cement but is cheaper).¹¹ On the first day of the project, though, problems arose. DOT stopped Diamond’s work after it observed that the concrete appeared to be “false setting,” i.e., setting up too quickly, and was not producing an acceptable surface.

Diamond claimed that the false setting was caused by defective cement supplied by SDCP and sued the supplier, seeking damages based on a number of theories, including breach of the implied warranty of fitness. The supplier defended on the grounds that the unusual paving methods, substandard equipment, and general disorganization of Diamond’s paving crew were the true cause of the concrete problems.¹²

At trial, every claim against the supplier was dismissed. On appeal, Diamond argued that the paving it was doing, slip-form paving, was a “particular purpose” under the UCC and, thus, was covered by the implied fitness warranty. The state statute under which the implied warranty fell provided that:

¹¹ Id. at 157.

¹² Diamond, for example, used a Bobcat instead of a concrete chute to move the concrete and place it in front of a paver. A DOT engineer with over twenty years experience testified that he had “never seen or heard” of such a practice. The engineer further testified that the repeated handling occasioned by the use of the Bobcat could cause the concrete to begin to set before it could be finished. Moreover, since Diamond delivered the concrete in dump trucks (rather than concrete trucks), it could not be remixed, a particular problem when delays occurred and the concrete was left sitting in the trucks. Additionally, the trial court heard testimony from other witnesses that the use of fly ash could have accelerated the concrete, causing it to prematurely dry out.

Where the seller at the time of contracting has reason to know any particular purpose for which the goods are required and that the buyer is relying on the seller's skill or judgment to select or furnish suitable goods, there is . . . an implied warranty that the goods shall be fit for a particular purpose.¹³

The court found that even if it were to agree that slip-form paving was a "particular purpose," the implied warranty of fitness was not applicable because the record was "barren of any evidence indicating the SDCP knew, or should have known, the cement requested would be put to a purpose other than general highway construction."¹⁴ Accordingly, the concrete contractor could not recover from the supplier. The court also noted, perhaps gratuitously, that "abnormal or unique use" can nullify the implied warranty of fitness for a particular purpose.¹⁵

¹³ S.D. CODIFIED LAWS § 57A-2-315.

¹⁴ Id.

¹⁵ Id. at 163. The court was undoubtedly referring to Diamond's apparent practice of transporting the concrete in dump trucks and then spreading it in front of the pavers with the front-end bucket of a Bobcat and indicating that even if the implied warranty attached, Diamond's "abnormal" use of the concrete probably voided the warranty.

PRACTICAL POINTERS

L When ordering concrete, it is always useful to attach (or reference) the project specifications and requirements to your purchase order. By doing this, explaining to the supplier what the concrete is going to be used for, and relying on the supplier's advice as to what mixture will satisfy those specifications, a concrete contractor preserves its ability to later claim, if events prove necessary, that the concrete supplied breached the implied warranty of fitness for its intended purpose.

VII. DAMAGES

A. Breach of Contract

As noted earlier, parties in privity can always assert a breach of contract claim against one another. This claim takes form as an allegation by one party that the other party to the contract has breached one or more of the duties it assumed under the contract. If proven to have breached, the breaching party would then, in the absence of a contractual limitation on damages, be liable to reimburse the injured party for *all damages* (including the cost of remedial work and liquidated damages) arising out of the breach.¹

B. Recovering Damages from Non-Privies

1. The Economic Loss Rule Generally

The economic loss rule essentially holds that a party who suffers purely economic harm (i.e., monetary damages) is not entitled to recover its damages from the responsible party in the absence of privity (i.e., a contract). The rationale behind the doctrine is that if a party suffers only monetary damages it has contractual remedies available to recover these types of damages.

“Purely economic loss” has been defined as “the loss of the benefit of the user’s bargain . . . including . . . pecuniary [money] damage for inadequate value, the cost of repair and replacement of

¹ See e.g., *Alumaglass Corp. v. Administratrix of Succession of Kendrick*, 303 So.2d 911 (La. App. 1st Cir., 1974).

defective product, or consequent loss of profits, without any claim of personal injury or damage to other property.”² Stated simply, the economic loss rule holds that an injured party may not recover certain types of money damages from an individual if the injured party does not have a contract with that individual. Thus, for purely economic injury (e.g., repair costs), liability and damages are governed by breach of contract principles and a party who suffers such damages can look only to the party it contracted with to recover those damages.³

EXAMPLE:

The Supreme Court of Nevada used the economic loss doctrine to dismiss the negligence and strict liability claims brought by a group of townhouse owners against the subcontractors who built the townhouses.⁴ In that case the townhouse owners brought suit on a number of theories, including negligence, against the developer, contractor and subcontractors. The homeowners alleged that faulty construction of the townhouses resulted in extensive water damage from rain and snow. The district court dismissed the homeowner’s negligence claims and expressly limited any damages the homeowners could recover from the subcontractors to contract damages or damages stemming from personal injury or harm to property in tort.

² *Huffaker Hills Units 3 and 4 Homeowners’ Association v. P&H Construction Inc., et al.*, 993 P.2d 1259 2000 Nev. LEXIS 24, at *10 (Nev. 2000)(quoting *American Law of Products Liability* (3d) § 60:36, at 66 (1991).

³ See e.g., *Broce-O’Dell Concrete Products, Inc. v. Mel Jarvis Constr. Co., Inc.*, 634 P.2d 1142, 1145 (Kan. Ct. App. 1981); see also, *Fisher Sand & Gravel Co. v. State ex rel. S.D. Dep’t of Transportation*, 558 N.W.2d 864 (S.D. 1997).

⁴ *Huffaker Hills*, 2000 Nev. LEXIS 24 (Nev. 2000).

On appeal, the Nevada Supreme Court affirmed the district court's decision and explained that:

[P]ermitting tort recovery for economic losses from construction defects would create a general, societally imposed duty on the part of builders and developers to avoid such losses. These losses are not properly addressed by tort law, which has as its underlying policy the promotion of safety. Instead, such harm is . . . addressed by the policies underlying contract law -- to enforce standards of quality as defined by the parties' contractual relationships.⁵

The economic loss doctrine has also been used to preclude a general contractor from suing an architect hired by the project owner.⁶ In a Virginia case, the general contractor sued the owner's architect for losses the general contractor claimed it suffered because the architect had negligently performed its contract with the owner. The court, however, dismissed the contractor's claim, noting that "*the architect's duties both to owner and contractor arise from and are governed by the contracts related to the construction project. While such a duty may be imposed by contract, no common law duty requires the architect to protect the contractor from purely economic loss.*"⁷

⁵ *Huffaker Hills*, 2000 Nev. LEXIS at *21 n.3. See also, *Nastri v. Wood Bros. Homes, Inc.*, 690 P.2d 158 (Ariz. Ct. App. 1984)(applying the economic loss doctrine to preclude a negligent construction action against a builder); *Atherton Condominium. Bd. v. Blume Dev.*, 799 P.2d 250 (Wash. 1990)(applying the economic loss doctrine to bar a negligent construction claim).

⁶ *Blake Constr. Co., Inc. v. Alley*, 233 Va. 31 (1987).

⁷ *Id.* at 34.

Most states would agree with the court's analysis quoted above. Thus, absent a clear contractual provision which establishes that an owner has some duty, e.g. to test concrete for the benefit of the contractor, a contractor generally will not be able to claim a benefit that it did not obtain in contract negotiations.

PRACTICAL POINTERS

L Concrete contractors should try to negotiate a contractual clause to the effect that:

Contractor will not be liable for damages resulting from the failure of others to properly test the concrete for compliance with contract specifications.

The above language should be acceptable because it does not relieve the concrete contractor from responsibility for installing concrete meeting the contract requirements. At the same time, the language allows concrete contractors injured by defective testing to claim the benefit of the clause and possibly mitigate the costs of repair. Note that this does not give the contractor a right to recover from the testing laboratory or tester but does provide the contractor with an opportunity to offset a general contractor's backcharge for remedial work. The offset would be equal to a amount related to what the cost would have been to correct the defect had the tester timely caught the problem.

C. Arguments Against the Economic Loss Rule

1. Minority Rule Jurisdictions

While the vast majority of states still strictly adhere to the economic loss rule, several jurisdictions (notably California and Florida) have retreated to one degree or another from a strict interpretation of the rule.

2. Third-Party Beneficiary and Negligent Infliction of Economic Loss

Perhaps the best chance a concrete contractor may have to recover damages from a non-privy is where the contractor can cast itself as a "third-party beneficiary" of a separate contract between the non-privy and a third-party. While many jurisdictions accept differing permutations of third-party beneficiary arguments, California courts, in particular, have

proven willing to adopt third-party beneficiary theories in the construction field.

Hypothetically, the theory would work in the following situation: A concrete contractor, who does not have a direct contractual relationship with the concrete tester or testing laboratory, works on a project under a contract with a general contractor. A testing laboratory and technician is hired by the owner to test the concrete for compliance with the project specifications. The tester, however, negligently or erroneously approves concrete which does not conform to the specifications. As a result, the concrete contractor must remove and replace the concrete at great expense.

The contractor, if it wished to recover damages from the tester could not do so under the usual theories because (a) the tester owed no contractual duty to the contractor and (b) the economic loss rule prevents the recovery of economic losses, in this case, the costs of repair. However, the concrete contractor could try asserting that the tester owed him a duty as the concrete contractor was a third-party beneficiary of the tester's contract with the owner. The reasoning behind such an argument would be based upon the following:

The subject matter of the tester's contract with the owner - whether the concrete met the project specifications - in reality benefits the concrete contractor because if the tester determines that the concrete is deficient, that test gives the contractor an opportunity to mitigate its damages before remedial work becomes enormously expensive. Thus, since the concrete contractor's economic well-being depends on the tester

performing its job properly, the concrete contractor can be said to be an intended “third-party beneficiary” of the owner’s contract with the tester. If the contractor is an intended third-party beneficiary, the tester then owes the contractor a duty to perform its testing competently and will be liable to the contractor for damages flowing from any deviation from that duty.

EXAMPLE:

A theory somewhat like the above was used by the Federal District Court for the Southern District of California in a case called *Los Angeles Testing Laboratory v. Rogers & Rogers*.⁸ In that case, the court retreated from the economic loss rule and instead utilized a sort of third-party beneficiary theory which could be called (although the court did not use the term) the “negligent infliction of economic loss” standard. In *Los Angeles Testing Laboratory*, the supplier of transit-mix concrete (“Holliday”) sued the general contractor (“Rogers & Rogers”) for a balance outstanding for the purchase price of concrete. The Los Angeles Testing Laboratory had been designated by the government architect to test and inspect the concrete on behalf of the owner. The Testing Laboratory joined the suit and sued for the balance of its fee.

The general contractor counterclaimed against Holliday, the Testing Laboratory and the project architect (collectively, the “counter-defendants”) on the grounds that the concrete supplied by Holliday was not up to specifications and that this was not brought to the general contractor’s attention until *after* the

⁸ *Los Angeles Testing Laboratory v. Rogers & Rogers*, 161 F. Supp. 132; 1958 U.S. Dist. LEXIS 2335 (S. D. Cal. 1958).

concrete had been incorporated into the building. As such, the general contractor argued that the furnishing and incorporation of the bad concrete into the building was due to the negligence of the counter-defendants, and that the counter-defendants were thus liable for the expense the general contractor incurred in remedying the problems created by the defective concrete.

Specifically, as against the architect, the general contractor asserted that since the architect had the authority to stop the work whenever necessary to ensure specified performance, the architect's *negligent interpretation of the concrete tests* had directly caused the economic loss which the contractor sought to recover. The architect moved for summary judgment, arguing that since it had no contract with the general contractor, it owed the general contractor no duty. The architect further argued that his duties (to bring due care to the supervision and direction of the work) were owed solely to the owner (the United States), with whom he contracted.

The court, however, noted that "California courts no longer follow the old common law rule that privity of contract must exist in order for negligent performance of a contractual duty to give rise to liability for damage to an intangible economic interest."⁹

The court stated that:

Considerations of reason and policy impel the conclusion that the position and authority of a supervising architect are such that he ought to labor under a duty to the prime contractor to supervise the

⁹ *Id.* at *7-8.

project with due care under the circumstances, even though his sole contractual relationship is with the owner. . . . Altogether too much control over the contractor necessarily rests in the hands of the supervising architect for him not to be placed under a duty imposed by law to perform without negligence his functions as they affect the contractor.¹⁰

The court continued, explaining that, in its view: The fact that the architect is retained by the [Owner] makes no difference. *Indeed, this circumstance increases the need for exercise of due care by the architect in his actions affecting the contractor*, because the [Owner] is in an even stronger position than others to insist that the work be done strictly according to specifications and that the contractor bow to the supervision of the architect.¹¹

As such, the court held that, notwithstanding the economic loss rule, under California law, the general contractor had stated an actionable claim against the architect. In essence, the *Rogers v. Rogers* decision leaves the door open for California concrete contractors to argue that regardless of a contractual relationship, if one party is in the position to reasonably rely on the other party (be it for construing and interpreting concrete tests or for that party's ability to stop work if the concrete does not comply with the specifications), then that party has a duty of care toward the concrete contractor not to act in a manner which causes the

¹⁰ *Id.* at *8-9.

¹¹ *Id.* at *9 (emphasis added).

contractor economic harm by precluding the contractor's ability to mitigate his damages.

3. **The “Voluntary and Gratuitous” Help Exception**

The California Court of Appeals has recognized yet another possible tool for a concrete contractor to use to avoid the economic loss doctrine when it applied a “voluntary and gratuitous help” exception to allow a contractor to sue a testing laboratory which negligently tested the concrete even though the contractor did not have a contract with the lab.¹²

The facts at issue were as follows: The plaintiff, a concrete contractor called the “Walnut Creek Aggregates Company” (“plaintiff”) contracted with Samson, Inc. (a concrete supplier) to supply ready-mix concrete as needed for certain structural additions to a high school. The defendant, Testing Engineers Incorporated (“defendant”), was hired by the school district to prepare a concrete mix design and test the concrete in accordance with the architect's specifications.¹³

The specified concrete mix called for a liquid admixture called WRDA (a water reducing agent supplied in 55-gallon drums) to be added to the concrete in certain amounts to improve the concrete's workability while reducing water content and increasing the concrete's strength. On one of the days when concrete was poured, however, a concrete additive called MBVR, an air-entraining agent, was accidentally substituted for the

¹² *Walnut Creek Aggregates Co. v. Testing Engineers Inc.*, 248 Cal. App.2d 690 (1967).

¹³ *Id.* at 692.

WRDA. The MBVR actually made the concrete *less* strong, although more resistant to freeze-thaw cycles.

The defendant's inspector—who was familiar with the different additives and knew the difference between air-entraining agents and water reducing agents-- failed to notice that a drum of MBVR (customarily furnished in black and white drums) had replaced the WRDA (customarily furnished in drums with large red and grey bands). Some time after the concrete was poured, the laboratory tests showed that the concrete poured on April 13th did not meet the project specifications for compressive strength. As a result, the general contractor had to remove and replace the defective concrete.¹⁴

The general contractor then sued the concrete contractor (the plaintiff in the instant case) and won a judgment covering the costs of removing and replacing the affected concrete. The concrete contractor, in turn, sued the testing laboratory and alleged that the defective concrete resulted from the laboratory technician's failure to detect that the drums supposedly containing the water-reducing agent were actually filled with air-entraining additive.

While the defendant testing lab had no contractual duty to participate in the mixing of the concrete in question, the appeals court held that it was a question for the jury as to whether the laboratory *voluntarily and gratuitously* participated in the mixing. If so, the appeals court believed the laboratory would have assumed a *duty to exercise ordinary care* with regard to the

¹⁴ *Id.* at 693.

concrete contractor and the contractor's intangible economic interests. The court stated that a "duty of ordinary care may arise out of a voluntarily assumed relationship whether or not it be based on, or related to, a contractual duty" and that whether that duty of ordinary care arose was a question for the jury.¹⁵

Theories such as the negligent infliction of economic loss, or finding a party economically liable based on a voluntarily assumed relationship giving rise to a duty of ordinary care, are premised, in essence, on the belief that it is fair to allow parties to recover damages from third-parties on whom they rely in the course of performing their contract. This third-party liability, however, does not always run to the benefit of the contractor and cuts both ways.

EXAMPLE:

The California Court of Appeals imposed third-party liability, in spite of the economic loss rule, to the detriment of a subcontractor who attempted to hide behind the lack of privity to shield himself when sued for damages allegedly caused by work which was not performed in a workmanlike manner.¹⁶ Although the trial court dismissed the case for lack of privity between the owner and subcontractor, the California Appeals Court reversed and remanded the case after finding that the owner was a *third-*

¹⁵ *Id.* at 694-695. It is a quirk of tort law that while parties do not owe strangers any duties, voluntary actions to help or assist a person give rise to a duty to act reasonably and not negligently. For example, if you are walking down the street and you see someone drowning in a lake, in most jurisdictions you can stand and watch the person drown with no liability to yourself (so long as the person is a stranger and you did not push him in). However, if you begin to wade into the lake to save the person, you cannot then turn around and wade back out. Under the law, your voluntary actions as a gratuitous "rescuer" impose on you the duty to rescue and it would be negligent for a rescuer to simply decide not to rescue after all. The California court in the referenced case applied a subset of this doctrine to the testing lab's actions.

¹⁶ *Gilbert Financial Corp. v. Steelform Contracting Co.*, 82 Cal. App.3d 65 (1978).

party beneficiary of the contract between the general contractor and subcontractor. As such, the court found that the subcontractor assumed the general contractor's duties toward the owner (including the implied warranties) with respect to the subcontractor's work on the project and could be held liable for breaching those implied warranties.

4. Economic Loss Rule Still Widely Used In the Majority of States

Despite the apparent view of the California courts that the economic loss rule is a relic of common law, the vast majority of states continue to apply the rule. As a practical matter, this means most concrete contractors must continue to look along privity lines if they are to recover repair costs from those with whom they have no contract.

EXAMPLE:

The *Los Angeles' Testing Laboratory* decision aside, a more typical result for most concrete contractors and suppliers who sue a testing agency or project architect is probably reflected by the case of *Asarco, Inc. v. Law Engineering Testing Co.*¹⁷ There, the appellate court of Tennessee held that a testing company did not owe a duty to a concrete supplier to accurately test truckloads of transit-mix concrete when the testing company only had a contract with the project owner.

Essentially, Law Engineering Testing Company (“testing company”), who had been retained for the owner’s benefit, negligently performed certain field tests and allowed the general contractor, Pike & Sons, Inc. (who was also doing the concrete work), to pour defective concrete on the second floor of a hospital project. When the 28-day compressive strength test results were analyzed, the concrete proved significantly under strength. Additional testing revealed that the defect was due to excessive air-entrainment. If the testing company had properly caught the defect during the initial pour (at the field-test level), the cost of repair would have been approximately \$1,000. Because the defect was not caught until *after* the concrete had hardened, however, the general contractor incurred costs of more than \$80,000 to remove the slab, rebuild the forms, and repour the concrete.¹⁸

The general contractor alleged that the bad concrete was the *supplier's* (Arasco, Inc.'s) fault and withheld the removal and

¹⁷ *Asarco, Inc. v. Law Engineering Testing Co.*, 1988 Tenn. App. LEXIS 489 (1988)(not for publication).

¹⁸ *Id.* at *3.

replacement costs from its balance due the supplier. The supplier then sued the testing company (for the balance withheld by the general contractor) and alleged that the testing company had a duty to it, the supplier, to properly accept or reject the concrete. The appeals court, however, noted that the supplier's contract with the general contractor incorporated the general conditions of the prime contract. Those general conditions clearly stated that *nothing* the architect or testing company did relieved the contractor (and, by incorporation, the supplier) from its obligation to perform the work in accordance with the contract documents.¹⁹ Moreover, since the testing agency's contract was with the owner, it only owed a duty to the owner. The court explained that:

The [Owner] could have decided not to employ a testing agency, and clearly in that instance [the supplier] would have had the duty to supply conforming concrete. [The supplier] also was free to hire its own testing agency or to employ its own quality control engineer to ensure the conformance of its product, but it chose not to do so. Likewise, [the supplier] could have bargained with [the general contractor] to modify the terms of the purchase order and avoid liability for providing nonconforming concrete. [The supplier] chose not to do this. The fortuitous presence of the owner's testing agency does not relieve [the supplier] of the consequences of its choices.²⁰

¹⁹ *Id.* at *6.

²⁰ *Id.* at *10.

As such, the supplier was held responsible for the costs directly associated with its failure to comply with its obligations under the contract to deliver concrete meeting the required compressive strength specifications.

D. Role of Insurance Coverage

Most construction “all-risk” policies, while excluding the cost of making good faulty or defective workmanship, do cover the cost of rectifying “damage resulting” from the faulty or defective workmanship. Concrete contractors have attempted to make claims under their all-risk policies on the basis that the “faulty or defective workmanship” was faulty testing by an architect or engineer and the “damage resulting” was the defective concrete. To-date, however, all such attempts have met the same fate as that suffered by the contractor in *Allianz Insur. Co. v. Impero*.²¹ That is, most all-risk policies will not cover defects in the insured’s work attributable to the insured party’s actions.

EXAMPLE:

In *Allianz*, the contractor (Impero Construction) poured walls with concrete that did not meet the required specifications. After making the appropriate repairs, the contractor sought recovery of the cost of the repairs from its insurer.

The contractor argued that the concrete deficiencies resulted because the concrete inspector performed the slump test *as the concrete came out of the trucks* and not at the point of placement at the forms where the concrete had been pumped approximately 120 feet.²² As a result of this error, the water content of the poured concrete was inadequate and voids appeared in the walls as the concrete cured. Both parties agreed that the fact the inspector was not an employee of the contractor was irrelevant.

²¹ *Allianz Insur. Co. v. Impero*, 654 F. Supp. 16 (E. D. Wash. 1986).

²² *Id.* at 17.

The contractor's all-risk policy excluded the:
(c) Cost of making good faulty or defective workmanship, material, construction or design, but this exclusion *shall not apply* to the damage resulting from such faulty or defective workmanship, material, construction, or design . . .²³

The insurer argued that, based on this clause, the cost incurred was not covered because it was for "making good faulty or defective workmanship." The contractor argued that the deficiencies in the walls resulted from faulty workmanship (the mistake of the inspector) and thus were "damage resulting" within the meaning of the insurance policy exclusion.

The court sided with the insurer and held that the defective concrete caused no damage to any other portion of the structure, other persons, or property. Since the sole claim was for the cost of correcting the deficiencies in the wall, the contractor could not be compensated for his costs in correcting his faulty work. As such, the court granted the insurer's motion for partial summary judgment and ruled that the defendant's claim was not covered by the all risk policy.²⁴

VIII. AN OUNCE OF PREVENTION IS WORTH A CUBIC YARD OF CURE

A. Generally

In spite of the California decisions mentioned above, most courts generally will not look favorably on a concrete contractor's attempt to reach beyond the contract to recover economic loss-type damages against non-privies. In fact, reported California decisions indicate that even California courts are reluctant to read the above decisions to reach beyond the narrow scope of the facts at issue in those cases. As such, it is important, if not vital, that concrete contractors attempt to negotiate adequate protection of their interests in the contract formation stage. Steps to take to inoculate yourself from claims, or

²³ Id.

²⁴ Id. at 18.

prepare for claims should something go wrong, are found in these materials in the “Practical Pointers.” This section addresses some additional ideas for prevention.

B. Indemnity Clauses

Indemnity clauses in construction contracts are a fact of life. These clauses essentially allocate risk between the parties by shifting responsibility for damages to the indemnifying party. While it is not possible (and probably counterproductive) to attempt to entirely do away with the clauses, there are steps that concrete contractors can take to limit the reach of otherwise broad indemnity clauses.

For example, while rare and often unenforceable, “broad form” indemnity clauses still appear in some construction contracts. Under broad form clauses, the contractor/indemnitor assumes any and all liability regardless of fault even if the liability is due to the other party’s (indemnitee) “sole negligence.” A more common clause, which *is* generally enforceable, is one where the concrete contractor assumes all liability except that due the other party’s “sole negligence.” This second - intermediate - type of indemnity clause can bind the concrete contractor to indemnify the other party for any and all liability that results from a problem for which the contractor, no matter how remotely, bears some fault. Looked at another way, if you are a concrete contractor and your subcontract with the general contractor contains an intermediate indemnity clause, if the general contractor is 99 percent responsible for a concrete problem and you are 1 percent at fault, since the resulting problem was not “*solely*” the result of the general contractor’s negligence, you must indemnify the general contractor for 100 percent of the resulting cost. Because of their broad reach and potentially onerous consequences, the broad and intermediate type indemnity clauses should not be signed by concrete contractors.

PRACTICAL POINTERS

L If a contract contains either a “broad form” or “intermediate form” indemnity clause, concrete contractors should insist that alternate indemnity language be used. An example of “limited indemnity” language that is advisable is found in AIA Document A-401, Standard Form Agreement Between Contractor and Subcontractor as set forth below (the pertinent language is italicized):

4.6.1 To the fullest extent permitted by law, the Subcontractor shall indemnify and hold harmless the Owner, Contractor, Architect, Architect’s consultants, and agents and employees of any one of them from any claims, damages, losses, and expenses . . . arising out of or resulting from performance of the Subcontractor’s Work under this Subcontract . . . *but only to the extent caused in whole or in part by negligent acts or omissions of the Subcontractor, the Subcontractor’s subcontractors, anyone directly or indirectly employed by them or anyone whose acts they may be liable*, regardless of whether or not such claim, damage, loss or expense is cause in part by a party indemnified hereunder. . . .²⁵

This clause basically holds the indemnifying party (indemnitor) liable only for and to the extent of those circumstances over which it exercises control. Thus, the clause protects the indemnitor from subsidizing the negligence of the indemnitee. As such, the clause is a valid middle ground which should be acceptable to both indemnitor and indemnitee.

C. The Pre-Pour Conference

The pre-pour conference offers an excellent opportunity to bring together all of the parties involved in a successful concrete project, before the work begins and costly mistakes are made. The conference should include the architect/engineer, the concrete supplier, the concrete contractor, the general contractor, and any subcontractors to the concrete contractor, for example, persons placing rebar, concrete finishers, or others who may have some role in the placement of the concrete or embedments in the concrete. The testing agency, if any, that is retained to evaluate the concrete for compressive strength, air-entrainment or other specification requirements should also be represented at the pre-pour conference.

The conference should begin with a review of the concrete specifications and the approved mix design to ensure that what will be delivered and placed, at least on paper, conforms to the architect/engineer’s requirements and is understood by all. Questions concerning submittals and approvals of the mix

²⁵ AIA Document A-401, 1997 Edition (emphasis added).

design can be addressed at this point, before the first cubic yard of concrete is placed.

In addition, attention should be focused on the mechanics of testing the concrete. Where are the tests to be conducted, at the point of delivery or at the point of placement? How frequently will the concrete be tested? What characteristics will the concrete be tested for? What are the specified compressive strength and other requirements which the concrete must have? Who will receive copies of the test results and when?

The idea behind the pre-pour conference is to gather together everyone who has a vital role and interest in seeing to a successful concrete job to ensure that before the work begins everybody understands their individual role and how the successful performance of their work will affect (and depend upon) the successful performance of someone else's work. The idea is to catch gaps in responsibility before something falls through the cracks, to ensure that everyone has the same understanding of their individual responsibilities and those of the others involved in the concrete work, and that there is a mutually-shared understanding of what is required, what is to be tested and where, and who will receive the test reports and take action on the test results.

D. Read Your Contracts!

Both suppliers and concrete contractors should consider modifying their contracts to gain more protection for their respective interests. Examples already given for concrete contractors include attaching the project plans and specifications to the contractor's purchase order. Additionally, it may be worthwhile for a contractor to review the supplier's form contract before it is accepted to determine whether the supplier has slipped in language waiving the express and/or implied warranties or liability for consequential damages. If so, the contractor should either strike the waiver or negotiate a better price. A supplier, on the other hand, can use its standard agreement to disclaim liability for

non-conforming concrete by expressly limiting the purchasing party's recovery to the cost of the replacement concrete itself rather than the significant consequential costs associated with removing and replacing the concrete, e.g., delay and lost efficiency costs.

Many general contractors and concrete contractors spend a lot of time, as they must, reviewing prime contracts and subcontracts. Those same individuals, however, often have no problem blindly buying goods (i.e., concrete) and signing supplier documents without thinking about the associated risks and problems. When buying goods, especially goods that are job-specific (as most concrete is), you must review the "contract" just as closely as you should review a prime contract or subcontract. The typical supplier agreement contains numerous terms to beware of. Potential areas of concern include:

- Payment: What are the terms? For example, if the order mandates payment COD or 30 days net (i.e., 30 days after delivery), this could leave you in the position of having to pay the supplier before you have been paid by the owner or general contractor. Additionally, it requires you to pay despite the fact that a certain amount of your contract sum will be withheld as retainage. While retainage will always be troublesome, concrete contractors should strike the problem payment terms and instead insert payment terms which mirror the payment terms in the prime contract or subcontract. Doing this, or simply extending the payment to 45 or 60 days net, somewhat takes into account the payment cycles on the job and is a practical way of ensuring that you do not incur finance charges because of a payment delay over which you have no control.
- Delivery date: Is the delivery date on the supplier's agreement? If it isn't, the supplier has no obligation to deliver the concrete at a particular time or day and you may be stuck with resulting delay costs. If the agreement is silent on the delivery date, you should either manually write a date into the agreement or, again, send the supplier a purchase order with the delivery date included.
- Warranties: Does the supplier's agreement mention warranties? If it does not, that's good. The *Uniform Commercial Code* will impliedly attach the warranties of merchantability and fitness for a particular purpose to the goods. The warranty of fitness for its intended purpose will also be implied if you (a) attached the

project specifications to the order, or (b) referenced the specifications in the order. Additionally, you must make clear that you are relying on the supplier's expertise for selecting a concrete mix which meets the specifications. In other words, do not tell the supplier what mix to provide. Instead, request the supplier provide a mix that will meet the project specifications attached to the order.

If the supplier's agreement *does* mention warranties, that's bad. This is because the mention is probably there to waive all other warranties on behalf of the buyer. In that case, the buyer can either strike the specific reference to warranties or provide his own purchase order which does not reference the seller's limited warranties.

- Remedies: What are they? Many standard documents for the sale of goods limit a purchaser's remedies to replacement of the defective product. In other words, the supplier will not be liable for consequential damages (removal and replacement costs, for instance) flowing from the tender of nonconforming or defective concrete. Striking a remedy waiver will arguably enable the contractor to recover consequential damages from the supplier which flow from the defective concrete.
- Disputes: Is there a forum selection clause? In the event of a dispute, does the supplier's agreement mandate that the dispute be litigated at a location different than where your company or the project is located? This is particularly a concern with nationwide suppliers. For example, litigating a claim in South Carolina when you are a Washington state concrete contractor can be a heavy burden in itself. Simply striking the clause greatly increases the possibility that the state where the contract was performed (the goods supplied) will have primary jurisdiction over any dispute that arises.
- Attorneys' fees: Do you pay their attorney fees? Some purchase orders mandate that in the event of a dispute the purchaser is responsible for all the supplier's reasonable attorneys' fees incurred related to the dispute. This obligates the purchaser to pay the supplier's attorneys' fees *regardless of the fault of the supplier*. At minimum, such clauses should be amended so that the attorneys' fees provision is a "prevailing party" provision under which the substantially prevailing party in the dispute can recover its fees from the losing party.

PRACTICAL POINTERS

L Concrete contractors must be vigilant with *all* paperwork. If the terms of the supplier's form agreement are unacceptable, a contractor essentially has three options: (1) strike the offending clause (i.e., ~~SUPPLIER DISCLAIMS ANY AND ALL WARRANTIES, WHETHER EXPRESS OR IMPLIED . . .~~); (2) amend the offending clause by handwriting changes where appropriate (i.e., "Payment is due ~~30~~⁶⁰ days after delivery"); or (3) send your own purchase order which can consist of a letter explaining what you need and attaching your own Terms and Conditions to the letter (e.g., "goods will conform to the project specifications"). Any of the three alternatives is viable and, at worst, if a dispute develops, resolution of the dispute will hinge on a "battle of forms" as to which terms in which purchase order apply.

IX. CONCLUSION

As most concrete contractors know, when concrete jobs go sour, the remedial costs can be very high, sometimes exceeding the profit the contractor has in the job. While many parties may, as a matter of fact, share in the blame for the problem, risk-shifting clauses and general legal principals tend to shift the entire risk of a concrete defect to the concrete contractor. Since factual and legal liability are two entirely different issues, it is vital that concrete contractors recognize and manage the potential risks to (a) avoid being left with complete liability, and (b) be in a position to reduce their ultimate liability by effectively responding to problems and issues that do occur. By understanding the various obligations and risks which the architect/engineer, owner, contractor, concrete contractor, testing agency, and concrete supplier have and the pitfalls into which other concrete contractors and suppliers have fallen, concrete contractors can understand both how to respond and what preventative steps are available to limit the possibility that *they* are financially responsible for a concrete job that has gone sour.