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ABC Warehouse I A Construction Defect

Construction of a tilt-up concrete warehouse for ABC Warehouse Company was going smoothly and progress was on schedule. There were very few changes and no unforeseen conditions, so the contract price and completion date are still intact.

Midway through the project, Allen Brady, president of ABC Warehouse Company, visited the jobsite with his warehouse manager, Carl Daly. They noticed slight cracking in the finish of the concrete floor slab and mentioned this to Ezra Field, job superintendent for Hyde Construction Company. Until this visit they had not gotten a really good look at the floor because of construction activity. Ezra defensively replied that the slab was as good as any he had ever seen, and besides, there was no such thing as a crack-free slab. Ezra thought he had pacified Allen and Carl, but they continued to discuss the matter while driving back to their office. Carl said, "You're paying good money for this job, Mr. Brady. We should get a perfect floor. There's no reason you should settle for less."

Allen replied, "I think you're right, Carl. I'm going to call Ivor. He's supposed to be a top architect. How could he let this happen? Why do we have to discover the cracks? What are we paying him for?"

Upon arrival at the office, Allen immediately telephoned Ivor Judge, AIA, senior partner of Judge & King, an architectural firm noted for the high quality of its construction documents and the recipient of numerous design awards.

Ivor had just returned from lunch with a new client and was very pleased with himself. He had an exciting new project ahead of him, and the ABC warehouse was progressing without problems. He was glad that Hyde Construction was the low bidder since they always did excellent work, and he considered himself lucky that Ezra Field was the job superintendent. Just then, Ivor's secretary interrupted his daydreaming and announced that Mr. Brady was on the phone. She volunteered, "He sounded very curt, not his usual friendly self. I hope nothing's wrong."

Ivor apprehensively answered his phone, saying tentatively, "Good afternoon, Allen. What's new?"

"Look, Ivor," began Allen, "I've just come back from the construction site and I'm concerned about the floor. It's all cracked and the finish looks lousy. It's a real mess. What are you going to do about it?" Allen was very demanding.

Ivor tried to calm him, saying, "I was just there yesterday, Allen, and the floor didn't look too bad to me. Sure, there are a few cracks and some minor crazing and maybe a little irregularity in the finish, but you've got

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some imperfections. Concrete slab floors aren't always perfect. By the time the sealer is applied, you can even notice the irregularities. It'll be even less noticeable when your merchandise is in the

interrupted testily, "Yes, but this is a brand new building. It was going to be a model for our industry. It's embarrassing to us when people from other companies look at our new building and see a second-rate

I think Hyde should remove the slab and replace it with a proper floor with no cracks and a finish.

bringing a note of reason, said, "I'm sure it won't be necessary to replace the slab, Allen. It isn't that if we did replace it, it would set the construction back six weeks, maybe longer. You wouldn't be able to move in as planned."

becoming irate. He said firmly, "It sounds to me, Ivor, that you're just making excuses. I want you to do this immediately and let me know what you and Hyde expect to do." And he slammed down the phone. Ivor could only reply.

Leo was shocked and dismayed, pondered the situation and then sought out his partner, Leo King. "Leo, we have a serious problem developing with Allen. He's unhappy with the new warehouse floor slab and wants it removed and replaced. He won't listen to reason."

Ivor frowned, said, "Wow, that really is a problem. Have you seen the floor?"

Leo said, "I saw it yesterday. It looked okay to me. It did have a little more cracking than usual, and there is a fair amount of crazing. The finish is irregular in several places, too," said Ivor, trying to be objective.

Leo said, "Do you think it's within industry standards?"

Ivor said, "It's borderline. I've seen better slabs, but this one should be acceptable. I wish Allen wasn't so worked up he won't listen to reason."

Leo's anxiety crossed Leo's face and he asked, "Have you checked our drawings and specifications to make sure we haven't made a mistake that could have caused this problem?"

Ivor said, "I haven't had time yet. I'll do it right away and then have the testing lab make some cores. And I'll call for a site meeting with George Hyde and Ezra."

Leo said, "I thought you were going to invite Allen to the meeting." Ivor replied, "I think I should. After all, it's his

Leo said, "You're right," and suggested that Myles Nolan, their structural engineering consultant be invited to the site meeting as well. Ivor agreed and spent the rest of the day and evening setting up the meeting, reviewing contract documents, and researching standards for concrete slabs. He got very little sleep, and skipped breakfast so he could be fully prepared for the meeting.

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Ivor arrived early for the meeting and found George Hyde and Ezra Field already on the site. The group immediately began examining the floors, wandering about the warehouse with bowed heads and occasionally kneeling to examine the slab more closely. Over half the floors were nearly perfect, but the rest had more than the usual cracking and crazing. Ezra tried to steer them into the better areas and verbally minimized the defects in a transparent effort to convince his boss that the floors met the usual high standards of Hyde Construction. George Hyde loudly agreed with Ezra, hoping to convince Ivor that these defects were minor and that the work in fact was better than average.

In the middle of their tour of the warehouse, Myles caught up with them. He had been the civil and structural engineering consultant on most of Judge & King's projects, including this one. After greeting Ivor, George, and Ezra, Myles wandered about the warehouse, noting the condition of the slab and occasionally drawing sketches.

A few minutes later, Allen and Carl joined the group. Ivor, having called the meeting, spoke first, and explained to George that Allen was concerned about the floors. Allen Brady interrupted, "The floor is one of the most important parts of a warehouse. This is the poorest looking floor I've ever seen. Something has to be done about it. I simply won't accept it." He was firm.

George Hyde's face and neck were getting red and he stated flatly, "Allen, there's nothing wrong with this floor. On average, it's as good as you'll find in this county. There may be some minor imperfections, but on the whole this is an acceptable warehouse floor." He, too, was firm.

Ivor turned to Myles and asked for his opinion. Myles, referring to his notes, said, "The cracking and surface defects are limited to less than twenty percent of the total area. The cracking appears to be superficial and should have no structural significance, but I'd like to review the drawings and specifications, cylinder tests, and slump reports before finalizing my opinion. Right now, I'd say that the floors could be easily repaired, and after the sealer is applied you'll hardly notice the repairs."

Allen said, "Well, I'm glad to hear there's no structural problem, but I'm still upset we're getting a substandard floor that already needs to be repaired in a brand new building that costs over \$2 million. We'll always be able to see the unsightly repairs."

Carl Daly whispered to Allen, "I still think they should tear out and replace all the defective floors. We should have a perfect floor like we paid for."

George, hoping to hurry the meeting along, said, "We can start the repairs right away and everything'll be alright."

Ivor replied, "George, don't start any repair work until we decide exactly what should be done. We'll work up a repair specification right away."

Allen, feeling he was being railroaded, said, "Wait a damn minute. Let's not get carried away on repair specifications. I want that shoddy floor removed and replaced with the quality I'm paying for. Ivor, tell 'em to do the job right and forget the damn repair specification."

Hyde, getting redder, barked, "Ivor, there's no way we're going to remove this damn slab. It's there to stay. Work up the repair spec and we'll get on top of it. But it'll be a cold day in hell when we remove that slab. That's final. You can bet on it."

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The meeting had broken down. Ivor concluded by saying, "Okay, gentlemen, we'll adjourn for now. But I'll give this my immediate attention and try to get this resolved. I'll keep in touch with everyone. Meanwhile, George, according to the contract, you must continue with the construction while this dispute is under consideration. And also, Allen, you must keep making any payments which have been certified. We don't want to cause any delay in the construction since there are liquidated damages of \$1500 per day." George and Allen looked at each other incredulously.

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Leaving the meeting, Carl congratulated Allen, saying, "You really told them, Mr. Brady. Now they know who's boss."

Allen replied, "I hope I said the right thing. If the floor has to be removed and replaced, completion'll be set back six weeks, according to Ivor. We have to be out of the old warehouse before June 1 or it'll cost us plenty. They've already leased it to a new tenant."

"But, Mr. Brady, the contractor would have to pay you liquidated damages of \$1500 a day, and that'd amount to—that's over \$10,000 a week. So six weeks would be \$60,000. That should easily cover our costs," said Carl, trying to sound authoritative.

"I'm not sure it would. I still have an uneasy feeling about all this. George Hyde is a hard headed businessman, and he isn't going to pay for replacing all those slabs and pay us \$60,000 without one helluva fight. As soon as we get back to the office I'll call our lawyer."

Allen called Philip Quinn, ABC Warehouse Company's attorney and explained the situation. Philip reviewed the contract over the phone with him and confirmed that Allen had to keep making payments pending final resolution of the dispute.

"Oh. It just seemed to me that it would be unbusinesslike to continue paying out money when our dispute must involve a fairly large sum of money. The payments have been around \$350,000 per month."

"Well, it's not all one-sided, Allen. After all, the contractor must keep working and committing more funds to the job. If you quit making payments that are certified by the architect, you'll have breached your contract, thereby justifying the contractor's quitting the job. Naturally, Hyde would have to observe the formality of a written notice first, but he could then claim all the money he has coming as well as any proven losses plus damages. Allen, I strongly suggest that we conform to the contract and wait a few days to see if Ivor can resolve this dispute as quickly and painlessly as possible. Incidentally, Allen, don't forget that you're holding over \$120,000 retainage from Hyde Construction so far. And Ivor is authorized by the contract to withhold the value of uncorrected defective work from future payment certificates."

Allen began to question the wisdom of his position and asked, "Phil, do you think I'm unreasonable in demanding that the defective floor slabs be replaced, rather than repaired?"

"I don't know, Allen. I'm just your attorney. I know very little about construction. Why don't you take your architect's advice?" Allen said he'd think about it.

"Oh, Allen, before you go, let me know if you receive any correspondence from George or Ivor on this subject and, for God's sake, don't you write any letters without checking with me first. Okay?"

"Okay, Phil."

"One more thing, Allen. Dig out your performance bond and send me a complete copy of it right away. I'd like to review it again."

"Okay, Phil."

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At the warehouse, George and Ezra discussed the best way to handle the situation. They concluded that the most economical way to repair the slab would be to inject an epoxy filler into the larger cracks, ignore the hairline cracks, and grind off some of the worst irregularities with an angle grinder. The originally specified slab sealer would tend to disguise these repairs. If they purchased the materials, rented the equipment, and assigned two laborers, the repairs would cost under \$4000. They agreed that this was the best solution, but George cautioned Ezra to wait until they had talked to Ivor before they began the repair work.

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Upon leaving the meeting, Ivor and Myles conferred privately about the floor slab. Myles reconfirmed that the problems were cosmetic and not structural, but cautioned Ivor to wait until he could review the test results to confirm this conclusion. Ivor asked Myles to expedite things: "Myles, please stay on top of this and report to me the minute you have a firm opinion. As you probably know, I'm obligated to make an interpretation and a decision on this dispute. It's required of me by the Owner-Architect Agreement, AIA Document B141, subparagraph 2.6.15 through 2.6.19. The owner and contractor have agreed in their contract to abide by my decisions. This is in the AIA General Conditions, AIA Document A201, paragraphs 4.3 and 4.4." Both of these documents were 1987 editions.

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Friday morning's mail brought what Ivor was waiting for. The test reports from Reliable Testing Laboratories. The cores tested proved that the slab was in excess of the specified compressive strength. The 28-day compressive strength specified was 2500 pounds per square inch. The cores tested, approximately 70 days old, were 2817, 2745, 2685, and 2640 psi. A fat envelope from Hyde Construction Company contained the laboratory tests of the 28 day old cylinders, observations of slump tests, the ready-mix concrete delivery tickets, and the job superintendent's daily reports from the days when concrete slabs were being poured and finished. Ivor had previously telephoned George Hyde's secretary and requested all these items.

Later on that morning, Myles Nolan arrived to review and discuss all the assembled data with Ivor. Myles spent an hour alone in the conference room with the contract documents and all of the engineering data and jobsite information. Then Ivor joined him and they reviewed the situation anew. Myles said that all of the laboratory tests and the concrete delivery tickets revealed that the concrete was in compliance with the specifications. The spacing and configuration of the control joints were proper in the drawings and in the construction. The steel reinforcing members had been noted as proper in the architect's and the engineer's field inspection reports. The contractor had used the proper sprayed-on curing compound.

The only anomalies discovered in the whole array of data were to be found in Ezra's daily reports, which revealed that some of the concrete had been poured on hot, dry days. This could easily explain the problems with rapid surface drying, thereby interfering with finishing operations and the normal curing process. If the curing compound was not applied in time, this could also contribute to the problems.

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Myles, referring to a growing pile of notes, said, "Ivor, I'm convinced there's nothing structurally deficient with those slab floors. They should give many years of good service. The cracks and irregularities are slightly beyond what would normally be expected, but they can be effectively repaired, although the repairs probably will show. However, the sealer will lessen the contrast, so the floors should look alright for a utilitarian building."

They concluded the best way to repair the floors would be to enlarge the larger cracks by sawcutting and sealing them with an epoxy filler, leaving the hairline cracks untouched. The high rough spots could be smoothed with a terrazzo grinder, and then the hardener-sealer would be applied, completing the repairs.

After Myles left, Ivor began to write his preliminary decision and to reach certain conclusions under the AIA General Conditions. First of all, he recognized that he had the authority to reject work that does not conform to the contract. This power is conferred by subparagraph 4.2.6. This also authorizes the architect to require additional testing. In this case, the slab cores tested were in conformance with the contract, so the cost will be borne by the owner. The slab repairing, however, will have to be paid for by the contractor.

The question asked by the owner was whether or not the slab was to be removed and replaced. Ivor noted that Allen had raised this question in a timely manner, that is, within 21 days of claimant's first recognition of the condition, as required by subparagraph 4.3.3.

Ivor noticed that subparagraph 4.4.4 provides that his decision will be final and binding on the parties, but is subject to arbitration if contested by either party. However, subparagraph 4.2.13 provides, "The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents." This put Ivor in a quandry. The question of removing the slabs was probably arbitrable, but the question of how to conduct repairs was a matter of aesthetic effect.

Ivor was required to make a preliminary response to Allen's claim within 10 days. Ivor was given five options: "(1) request additional supporting data from the claimant; (2) submit a schedule to the parties indicating when the Architect expects to take action; (3) reject the Claim in whole or in part, stating reasons for rejection; (4) recommend approval of the Claim by the other party; or (5) suggest a compromise. The Architect may also, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim."

Ivor reasoned that what he has in mind is a compromise, option (5). He drafted a joint letter to ABC Warehouse and Hyde Construction suggesting that they compromise by allowing the anomalous slabs to remain and repair them in the manner he and Myles devised. He also stated that the final decision would be made within seven days.

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When George received Ivor's preliminary decision, he immediately asked his estimating department to figure out what this method of repair would cost him. Out of curiosity, he also asked what it would cost to remove and replace the irregular slabs. The estimating department soon responded. Repair of the slabs using Ivor's technique would cost Hyde Construction \$12,230; removal and replacement of the slabs would cost \$105,680.

When George contrasted a \$12,230 repair bill with his own \$4000 scheme, he immediately called Ivor and said, "Hell no, we won't go for this gold-plated repair job. It costs too damn much and is totally unnecessary. We can do it much easier and cheaper and it will be plenty good enough."

Ivor tried to explain that he had to be fair to both the contractor and the owner and ended the conversation by reminding George that the final decision would be out in a few days.

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Allen's response to Ivor's preliminary decision was an irate phone call, demanding removal of the slabs. Allen concluded by stating, "I haven't changed my mind. I'll have my lawyer write you a letter confirming this decision."

Allen immediately called Phil, fuming, "Ivor stabbed me in the back. His preliminary ruling is against me. He wants me to accept a hokey repair scheme. I paid for a perfect concrete slab floor, and that's what I should get. I want you to write him a letter rejecting this ridiculous compromise and directing him to proceed with my original demand for a new, perfect floor. You might also explain to him who his client is and who's paying his fees."

Phil agreed to do so, pointing out that the letter would only reject the compromise and reinstate Allen's original claim. Phil added, "It'd be highly improper and inadvisable to pressure him as you suggest." Phil asked Allen to send him a copy of the preliminary decision. Allen agreed to do so, wondering how much Phil was going to charge for all these extra services.

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The next day, Ivor realized that the situation was not improving. George Hyde and Allen Brady were both highly displeased with his preliminary decision. Apparently no decision would be acceptable to both of them. Thus Ivor decided to disregard George or Allen and instead to design a solution that he personally believed was both fair and technically correct.

His final decision was the same as the preliminary decision except that it stated this decision would be final and binding but subject to arbitration as provided in subparagraph 4.4.4. He also pointed out that if the decision were appealed by either side, an arbitration demand would have to be filed with the American Arbitration Association within thirty days.

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Upon receiving Ivor's final decision, Allen became furious and immediately called Phil, saying, "Phil, the final decision just came. It's the same as before. Ivor is still only asking for repairs of our floors. Hyde's getting off too easy. What can we do now?"

"Now, Allen, calm down. Ivor didn't have much choice in this matter. In law there is a general principle called substantial performance. Even if Ivor had required complete replacement of the affected concrete slabs an arbitrator would probably reverse the decision. The floors, after repairs, will perform their intended purpose. Ivor must feel that the contractor has substantially performed the contract."

Allen asked about appealing the decision, and Phil replied, "I don't think it would be wise to appeal. It would take a lot of time, there would be costs of expensive expert witnesses, and in my opinion, you'd probably lose. It seems to me that you're getting a pretty good building at a reasonable price and the floors will be serviceable despite some slight imperfections."

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"Well, maybe you're right, Phil. Maybe I was paying too much attention to Carl, my warehouse manager. He had his mind set on a perfect new warehouse. I can see now it's somewhat impractical in the real world. I appreciate your good advice."

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When George received the final decision, his first reaction was disappointment. He walked into his chief estimator's office and said, "I just reviewed Ivor's final decision. We're going to have to spend \$12,230 on flooring repairs. Thank God he didn't side with Allen or we'd be looking at \$105,680. Maybe if we went for an appeal we could get them to cut the repairs down to \$4000 doing it our way. What do you think?"

The chief estimator replied, "Well, George, if we go to arbitration, we could easily spend the \$8230 difference in lawyer's fees, loss of your time, Ezra's time, and my time. We might even need an expert witness, an architect or engineer. And we might not win. There's also the risk that the arbitrators might see some merit to Allen's idea of replacing the slabs. No, George, I vote for accepting the decision and hope that Allen doesn't go for an arbitration appeal."

George, philosophically and with resignation, commented, "I guess I should be grateful I have an analytical chief estimator and a fair minded architect on the job."

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This is the end of the ABC warehouse floor controversy. The floors were repaired, and they look much better than Allen and Carl expected. Allen also learned from a realtor friend that the blemishes would have no adverse effect on either the rental value or the resale value of the property.

The new building was completed before the contracted completion date, thereby enabling ABC Warehouse to vacate their old premises on time. They were well settled in their new building in time for their grand opening party on June 1. Allen and Carl were proud of the new warehouse when their customers and warehouse industry leaders showed up at the celebration.

Aside from the flooring problem, Hyde Construction suffered very few setbacks, completed the building a few days early, and nearly made their scheduled profit. George and Ezra toasted themselves with champagne at the opening party and happily accepted well-earned congratulations.

Ivor and Leo were pleased with the final result, and can now count both Allen and George among their loyal friends. At the opening celebration they met some excellent prospects among the leaders of the warehouse industry. The completed project will be a worthy entry for the next AIA chapter award program. And they all lived happily ever after.

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Moral: Firm, fair, and prompt contract administration in the hands of a competent architect will go a long way in settling construction disputes before they get hopelessly out of hand.

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