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Smoothing nerves

Industry, Caltrans take on "arduous" spec change

It is the biggest change in asphalt specifications in California since the state transportation department went to a quality control/quality assurance model in the 1990s, and that has a lot of people very nervous.

Up against a July 1 implementation deadline, Caltrans engineers and representatives of the asphalt-pavement industry have spent the past year poring over charts, tables and footnotes of the 60-page revision to Caltrans standard specifications for hot-mix asphalt (HMA) materials, mix design, construction and acceptance. Caltrans initiated the rewrite with the stated goal of finally moving the department toward the national Superpave approach and AASHTO test methods.

Joe Peterson, chief of roadway materials testing for Caltrans, equated the year-long process of developing the new specification with industry input to a road-improvement project.

"We started off with a very rough road. Everybody was feeling every little bump and every little concern," he said. "As time has passed, what we are seeing is the road is smoothing out. I think we've collectively come together. While both sides still have some concerns, they're not anything that I would call an 'Oh my gosh!' We need to step back, follow the process, work together, see what we get and come to a resolution on any minor bumps that might occur. That's all a part of being partners, and it's all part of the evolution of a specification. It's a living document."

A similar assessment was offered by a key industry participant.

"I must say, being up against a tight deadline for the implementation of Superpave technology in California created some consternation among all parties as we ventured into uncharted waters," said Tony Limas of Granite Construction, who serves as industry co-chair of the joint industry-Caltrans Rock Products Committee, which oversees new and revised specifications. "Thankfully, as we approach the light at the end of the tunnel, it appears the



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hard work of both Caltrans and their industry peers will pay off nicely with a technically sound and thus biddable specification."

Still, there is plenty of trepidation on the part of industry, as evidenced by a recent industry-only meeting held at Granite's Sacramento, Calif., offices Jan. 20 to gather feedback on the nearly final version of the specification. In a stifling conference room ringed with historical photos of construction activity, it recalled the days of yore, when asphalt-pavement acceptance amounted to, as the joke goes, "If it's hot and it's black, then it's good."

A challenging 12 months

The broad group of attendees, ranging from asphalt producers, technicians, contractors and testing labs, sat hunched around laptops, going through the specification line by line. They expressed concern that so much was changing in the new specification that it was adding additional cost and imposing additional risk to contractors. Moreover, since California has limited experience with Superpave mix design and supporting equipment and test methods, engineers and technicians worried that material may fall out of specification, leading to conflict and claims at the plant and the jobsite.

"We're trying to do in 12 months what it took three years to do in the previous revision, and it wasn't nearly as complex," one engineer commented about the spec-revision process. Another attending the meeting via conference call said, "How can I, as a materials supplier, bid on something when I haven't done the work before?"

Grinding through multiple revisions of a complicated specification is made even more difficult because of fresh wounds inflicted by the economy and past clashes.

The construction industry in California is still reeling from the worst economic downturn since the Great Depression, with some companies shedding 30% or more of their work force, while others merged or padlocked their doors. Caltrans, meanwhile, has been stung by budget cuts, employee furloughs and scrutiny over materials testing on the new San Francisco-Oakland Bay Bridge, which made national headlines and prompted a new transportation secretary to order a top-to-bottom review of the department conducted by an outside entity, the Smart State Transportation Initiative at the University of Wisconsin. It was a bitter pill to swallow for a century-old department that pioneered many transportation innovations that are commonplace today.

The industry-agency relationship is important, people on both sides of the issue insist, but things got so testy in 2012 that the asphalt industry suspended meetings with Caltrans, and the department responded by publishing a partnering "charter"—essentially a roadmap for working effectively together—with no industry signatures. Industry resumed attending the technical meetings in 2013 because, as one ruefully observed, "If you're not at the table, you're on the menu."

Could be costly

In 2011 Caltrans announced that it was going to adopt the Superpave mix design method effective July 1, 2014. The current

Hveem mix design method was originally developed in the 1930s by Francis Hveem, an engineer with the California Department of Public Works, Division of Highways, as Caltrans was known at the time. The new Superpave name is derived from "SUPERior PERforming Asphalt PAVements," and was a state highway agency initiative of the late 1990s. Nationally, California and Nevada are the only states that have not fully implemented Superpave.

Superpave is shorthand for a performance-based suite of test procedures for materials selection and design of asphalt mixes. The highly focused, product-oriented research program was funded by the states through the American Association of State Highway & Transportation Officials (AASHTO) and administered by the Strategic Highway Research Program (SHRP). It is a comprehensive method of designing asphalt mixes tailored to specific and unique performance requirements governed by climate and traffic. One aspect of Superpave, the performance-grade (PG) system of classifying binders, has already been implemented in California.

Caltrans has said its goal in transitioning to Superpave is to help the state adapt to changing environmental conditions, new binder grading systems and changes in traffic patterns. In moving to Superpave, California also will capitalize on the many national research efforts undertaken in support of the



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Superpave mix design methodology. The big game-changers for California are the gyratory compactor and the Hamburg wheel track test—new for many in the asphalt industry in the Golden State, even though they have been in use in other states for years.

Contractors who closely follow Caltrans specifications, and have been invited to provide feedback on the new specification, said that the transition to Superpave is complicated by the simultaneous weaving of reclaimed asphalt pavement (RAP), warm mix and asphalt rubber into the mix. Several bristle when the revised specification is called Superpave, arguing that it is just a more complex and costly version of the existing Caltrans specification.

In its most recent version, for example, the specification as written would likely result in a tripling of the cost of asphalt-mix designs, one veteran lab engineer opined, as the tests required for a standard Hveem mix design would increase from \$2,500 to about \$10,000. Mix verification costs and plant start-up costs could quadruple.

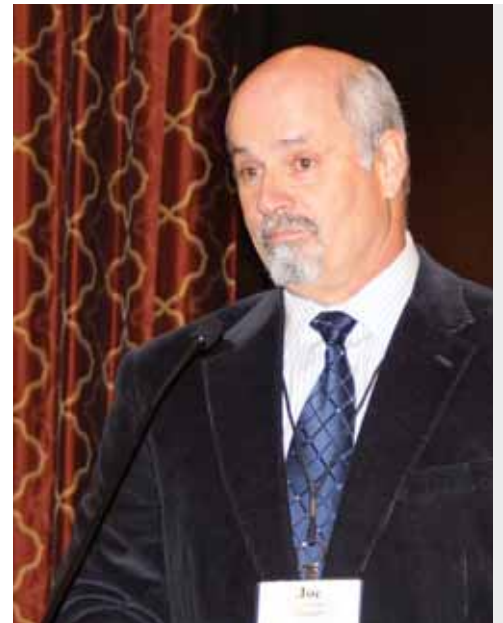
Even worse, some veteran industry observers noted, the new specification continues a recent trend to be more prescriptive rather than a true performance-based specification. “We’re getting very little improvement in pavements for a very high cost.” That alone is a horrifying notion for state road budgets, which have been dropping precipitously while the condition of the roadways has worsened. A recent report by TRIP found seven of the top 20 regions nationally with the bumpiest roads were located in California, and several surveys rank California as having some of the worst traffic congestion in the country. A recent Caltrans assessment found a nearly \$300 billion shortfall in funding to return the state’s roads to good condition. Every requirement in a specification has a dollar amount attached, and those dollars can add up quickly.

Not that developing transportation specifications in California was ever easy. The state is more like a country, with nine different climate zones, a dizzying array of aggregate sources and unique binder sources that can confound even the most knowledgeable materials engineer. And then there is the rapid pace of innovation in the asphalt world, from fuel-sipping warm-mix asphalt to RAP, rubber pavements and new surface treatments. New equipment and technology also is advancing at a rapid clip, from “intelligent” asphalt-pavement rollers that aid in compaction with the use of lasers and Global Positioning Systems (GPS), and new inertial profilers to measure pavement smoothness with a speed and accuracy that could not even be imagined just a few years ago.

Shortened list of concerns

To begin the Superpave implementation process, Caltrans held several meetings with its industry counterparts to discuss the implementation plan. In early 2012 Caltrans formed a Superpave Subtask Group (STG) under the auspices of the Caltrans-Industry Rock Products Committee. Initial Superpave implementation activities began with a draft specification to be administered on pilot projects. Following a short review period, the STG identified 105 areas of concern. After further review and discussion, the initial list of concerns was condensed to 85. As the months wore on, the list dwindled to a few “official” objections, but plenty of uneasiness remained.

Because a number of the Superpave provisions are untested, industry stakeholders have continually expressed concern regarding the risk in bidding and building these projects. Conceptually, contractors can try out the new specifications prior to bid. However, in reality some of the Superpave provisions impart more stringent material requirements that may necessitate significant changes to material processing and plant production.



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The department has pledged that final disposition of the remaining issues will be revisited pending data collected from the pilot projects. It is anticipated that regular Superpave projects will be out to bid in the early part of 2014 to meet the July 1, 2014, implementation date. With only limited data from pilot projects received so far, Caltrans and industry are working feverishly to gather and analyze the data as quickly as possible to put the finishing touches on the specification.

Pretty much left out of the discussion, however, is how the new specification will affect the many cities and counties that reference Caltrans specifications for local road projects. There are no local-agency representatives involved in the industry-agency meetings, so the state asphalt-pavement association has taken it upon itself to publicize the changes in meetings, seminars, conferences and bulletins.

At the industry-only meeting in Sacramento to review the latest Caltrans specification, one participant was asked to offer a one-word summary of the review process. After furrowing his brow, he exhaled and said in a low and weary voice, “arduous.” **R&B**

Snyder is the executive director of the California Asphalt Pavement Association, West Sacramento, Calif.

For more information about this topic, check out the Asphalt Channel at www.roadbridges.com.



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