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International Union of Laboratories and Experts in Construction Materials, Systems and Structures Réunion  
Internationale des Laboratoires d'Essais et de Recherches sur les Matériaux et les Constructions

## **RILEM Task Group 2**

### ***Mixture Design and Compaction***

## **RILEM TG2 MEETING – WASHINGTON, D.C.**

### **12 JANUARY 2010**

### **12:00 – 2:00 PM**

### **ROOM 8209 MARRIOTT (PARK TOWER)**

**Purpose:** The objective of this meeting is to update the TG2 members on the status of the laboratory compaction study currently underway. This includes updates on analysis of field images of the LCPC mix that was used to generate the laboratory specimens of various methods as well as current status of the State-of-Art Report that is the anticipated outcome of the TG2.

#### **1. LCPC Field Images vs. Laboratory Compaction Methods**

Aaron has begun analyzing the field images from LCPC using the 2-D imaging software used for the laboratory compacted mix images. The analysis focused on the aggregate orientation. Additional work is needed to provide a consistent comparison between field and lab images from the same plane.

#### **2. Status of State-of-Art Report**

Dr. Mahmoud distributed several hard copies of the current draft of the report. The TG2 contribution to the report consists of two main parts, compaction and imaging, the draft distributed covered the compaction section. The current draft will be uploaded to the TG2 webspace and a link will be sent to all members to allow those not in attendance an opportunity to read it. The complete draft is anticipated by March at which point we will be looking for volunteers to review the report in its entirety.

#### **3. Triaxial Test Results of Specimens from Various Compaction Methods**

TU-Braunschweig has completed triaxial cyclic compression testing on specimens prepared by various compaction methods. Distinction can be made between samples based on compaction method in terms of strain rate and poisson's ratio. However a range of void ratios was also observed. Images of the tested specimens will be sent to UW to be analyzed using the 2-D image analysis software. Influence of internal structure on the performance will be evaluated.

#### **4. Details of image-based analysis of aggregate packing**

Prof. Kutay presented the calculations and derivations behind the image-based analysis software that is being used to look at both field and laboratory images to bring new people in attendance up to speed on TG2 activities. This included verification of ability of software to distinguish between HMA specimens on a number of levels. This sparked further discussion of filtering and threshold values by a new attendee.

#### **5. ACTION ITEMS**

- TU Braunschweig will upload images of performance tested specimens for UW to perform image analysis.
- Request will be made to obtain CT scans of LCPC field samples
- Specimens at UW that were previously sliced horizontally for imaging will be sliced vertically to obtain additional images and combination of images will be checked for consistency by performing virtual slices of CT scans.
- CT images and additional slicing should allow for comparison of laboratory and field specimens within same plane to better identify laboratory compaction method most representative of field compaction in terms of internal structure as determined by imaging-based analysis.
- Further analysis will distinguish between aggregate orientation relative to radial or horizontal by using variables  $\alpha$  and  $\theta$  to be consistent with software.
- Final draft of State-of-Art report expected by March. At that point request for volunteers to review the report will be sent to the group.
- Interim group meeting to discuss report will be held between those members attending AAPT.
- Current draft of report will be posted to webspace once reference list is updated. The outline of the image analysis part will be added as well.