

Mack Surveillance Panel

Thursday February 7, 2013
10:30 a.m. – 12:00 p.m. Eastern Time

Dial-in number:

877-344-4239

Passcode:

483093#

Mack Surveillance Panel Meeting Notes

The teleconference convened at 10:30 a.m. Eastern time, with Mark Cooper as Surveillance Panel Chair.

Membership / Attendance

Mark Cooper

Jim Moritz, Jim Matasic, Allison Rajakumar, Bob Campbell, Christian Porter, Jeff Clark, Sean Moyer, Elisa Santos, Jim Gutzwiller, Addison Schweitzer, Scott Richards, Mark Cooper, Jim Rutherford, Mark Sutherland, Zack Bishop, Rich Schafer, Chuck Anderson, Blair Jenness, Greg Shank, Allison Athey, and Chris Cauley.

T-12 liner surface specifications

Group

Mark Cooper began discussion by stating that Federal Mogul agreed to attempt to locate additional historical data containing surface finish parameters values on cylinder liner 509GC463 at the last meeting and provided additional data via e-mail to discuss. Federal Mogul provided R_a , R_{pm}/R_{3z} , R_{pk} , R_k , and R_{vk} values from 4/25/2000 for liner part number 509GC463 in addition to the data back to 2005 presented at the last meeting on 2/5/2013. Scott Richards agreed to provide the definitions of different surface roughness parameters to the Panel. The honing processes were also issued by Federal Mogul per the last meeting and were discussed. Jim Moritz asked for further clarification from Federal Mogul on which honing technique was likely utilized for the different liner batches. According to Federal Mogul the liners after 2005 were produced on Wc785 (Barnes Hone). Batches S and T were likely completed utilizing the Barnes Hone. For the life of the Mack T-12 test, the Barnes Hone (Wc785) was used according to Federal Mogul. Mark Sutherland at TEI provided data and plots acquired for batch S, R and T liners. Mark did ask the Panel to take into account that the batch S liner data was obtained using only two liners. The cross-hatch angle was agreed upon by the panel at the Mack Surveillance Meeting on Tuesday 2/5/2013 (45 +or-2.5 degrees). The Panel was to decide upon surface finish parameter specifications on today's teleconference. The general agreement as of the last meeting was to generate a small batch (250 liners) that best matches the Batch R liners surface finish. Mark Cooper asked for clarification from Federal Mogul on how they would target R_a , R_{pm}/R_{3z} , R_{pk} , R_k , and R_{vk} . Federal Mogul stated that the setup time would take additional time and measurements would be performed prior to proceeding with generating the liner batch. Cross-hatching was targeted for 45 +or- 2.5 degrees and R_a would be aimed for 12-18. Federal Mogul agreed to produce a 250 liner batch with respect to historical Batch R liners R_{pm}/R_{3z} , R_{pk} , R_k , and R_{vk} values, and that the manufacturing timeline would be available by Friday of this week (2/8/2013). Castings could begin on Monday (2/11/2013) according to Federal Mogul. Addison Schweitzer questioned if the stones during the Barnes

Honing process would be changed more frequently. Federal Mogul is currently discussing internally with engineers about replacing the stones more frequently to meet more stringent surface roughness parameters. Federal Mogul agreed to target a higher R_{vk} which would be monitored throughout the manufacturing process and that the stones would be changed as needed to meet the target. Jim Matasic questioned if everything went smoothly how quickly the liners could be produced. Federal Mogul responded 2-3 weeks assuming everything ran smoothly. Zack Bishop of TEI mentioned that 3000 liners would be ordered once the issue is rectified in order to meet demand on Mack T-12 testing to 2020. Zack Bishop is currently generating the PO to purchase the small batch of liners. TEI agreed to screen surface finish parameters the 250 liners prior to issuing them to the industry test labs. TEI requested that the industry test labs order and finance the test kits for the industry required Mack T-12 tests. Mark Cooper suggested that the industry use the small batch of 250 to set the specifications. The Panel discussed casting all of the liners to avoid differences in microstructure between the 250 liner batch and the larger 3000 liner batch. Greg Shank agreed to target running tests at every industry test lab by mid March.

Action Item:

Mark Sutherland took as an action item to provide the cross-hatching and surface finish specifications to Federal Mogul for the liner manufacturing process.

Motion

Jim Moritz initiated a motion to change the Ra specification on the smaller 250 liner batch from 12-16 to 12-18.

Greg Shank seconded the motion.

All for
None opposed
TMC waives.

Status of T-11 reference tests on 'tweaked' Oil 822

Intertek's industry required Mack T-11 reference was at 37 hours, Lubrizol's reference test was at 144 hours with oil consumption ~28 g/hr, Afton's reference was at 146 hours with oil consumption ~58 g/hr, and SwRI reference was to begin 2/7/2013.

Status and availability of T-12 and T-11 tests

Our intention for the next reference on the Mack T-12 is to utilize the pistons, rings, rod bearings, and main bearings with the new liners.

Action Item:

Sean Moyer took as an action item to provide BOT ring gaps on the Mack T-12.

Mark Cooper questioned if we should notify the industry on the status on the Mack T-11 and T-12. Greg Shank stated that an update could be provided once the timeline is received on the liners and following a teleconference to compile thoughts. Sean Moyer stressed that a test is considered unavailable once testing

is unavailable at independent test labs. Greg asked Mark to schedule a teleconference in approximately a week to discuss and establish a timeline.

Next Meeting

Mark Cooper

The next proposed Mack Surveillance Panel Meeting was decided to be held on February 21st 2013 at 10:30 AM EST.

Meeting Adjourned at 11:55 a.m. Eastern time.