over their stopping distances before burnishing takes place.

NHTSA is not persuaded by the comments from CAS and Advocates regarding the need for a pre-burnish test, and has decided to not include this test in the final rule. The arguments by CAS and Advocates are essentially the same as those made in response to the 1987 SNPRM (Notice 4). These comments were already addressed in the preamble to the 1991 SNPRM (Notice 5, 56 FR 30533).

Advocates has made an unsupported statement that disc brakes are highly resistant to burnishing. No test data or other evidence was supplied to support this allegation. Regardless, the pertinent question is not how long or how many miles it takes to burnish brakes in use, but whether there is a big enough difference in performance before and after the 200-stop burnish specified in the standard to present a safety problem. If some types of brakes do take a long time to become fully burnished, then they would not be fully burnished after the 200-stop burnish sequence specified in the standard, so they would have to meet the cold effectiveness stopping requirements in a partially-burnished state. If that were the case, their eventual, fully-burnished performance would be even better than that required by the standard.

Advocates also argued that stopping distances before burnish may be considerably longer than after burnish. This statement was also unsupported by any test data. Agency testing conducted during the development of this standard (Harmonization of Braking Regulations—Report No. 1, Evaluation of First Proposed Test Procedure for Passenger Cars, Volume 1, May, 1983, DOT HS 806–452) showed that in some cases stopping distances were somewhat shorter after burnish, and in other cases stopping distances were shorter in the unburnished state. However, the overall conclusion was that the burnish had a small effect on stopping distances. Also, this research was done using the burnish procedure specified in FMVSS No. 105, which is more severe than that specified in FMVSS No. 135, and would therefore have a greater effect on braking performance.

4. Burnish

Burnish procedures serve as a conditioning to permit the braking system to achieve its full capability. In the 1987 SNPRM (Notice 4), NHTSA proposed specifying 200 burnish stops. The agency stated that the burnish procedures would stabilize brake performance and reduce vehicle and test variability. In the 1991 SNPRM (Notice 5), the agency proposed almost the same requirements as the earlier SNPRM. The only substantive change from the earlier notice entailed specifying that the pedal force would be adjusted as necessary to maintain the specified constant deceleration rate.

Kelsey-Hayes and Honda recommended that the burnish procedures be made consistent with the ones in FMVSS No. 105, with respect to the number of burnishes, the test speed, and the deceleration rate. Specifically, both commenters recommended that the test speed be 65 km/h (40.4 mph) and the deceleration rate to be 3.5 m/s (11.5 fps). While these conditions enabled Kelsey-Hayes to conduct the FMVSS No. 105 burnish on a secluded public road, the proposed burnish requirements for FMVSS No. 135 would have to be conducted at a commercial test facility, which may not be readily available. Honda stated that the cost of the proposed FMVSS No. 135 burnish test was more than the cost of the FMVSS No. 105 burnish, even though the brake temperatures at the end of the respective burnish procedures are the same. JAMA and Toyota recommended that the test speed be reduced from 80 km/h to 70 km/h because the brake temperature would increase too much under the proposed burnish speed.

NHTSA has decided to adopt the burnish procedure as proposed in the 1987 and 1991 SNPRMs. As explained in those notices, the agency purposely changed the burnish procedure from the one in FMVSS No. 105 to provide a more realistic burnish. NHTSA believes that the new burnish procedure will more closely match real world situations, including the actual type of burnish most drivers will achieve in the course of normal driving. The burnish procedure in the harmonized standard will better reflect the real world capabilities of the brakes in a passenger car. The new burnish procedure itself will not affect the time or mileage needed to burnish brakes for the average driver. NHTSA believes that the burnish procedures adopted by today's final rule represent an efficient burnish procedure that is consistent with R13 and the ECE harmonized version of R13H.

NHTSA is not able to determine the meaning of JAMA's comment that the temperature ''would increase too much'' under the specified burnish procedure. As previously stated, the agency believes that the specified burnish is more representative of actual driving experience. Therefore, any temperature increase during burnish would also be experienced on the road.

Advocates and CAS stated that the burnish procedure proposed for FMVSS No. 135 would not ensure that cars are tested with properly burnished brakes. They stated that decreasing the deceleration rate, lowering the initial brake temperature, and introducing a variable pedal force would extend the time and mileage needed to complete a full burnish. Advocates further believed the proposed burnish procedure would not evaluate how well the brake system reacts to higher temperatures, along with the resulting potential for fade during the initial burnishing.

NHTSA believes that Advocates and CAS misunderstand a fundamental principle of brake burnish procedures: a less severe burnish results in a more severe test. The burnish procedure has no bearing whatsoever on how long it will take a vehicle to achieve full performance in actual use. More specifically, the agency notes that the changes proposed in the 1987 SNPRM (Notice 4) about the burnish procedure (*e.g.*, lower initial brake temperature, lower deceleration rate) would be more similar to typical driving than those in FMVSS No. 105. Moreover, NHTSA believes that most vehicles will not be driven for long periods of time in a significantly less burnished condition than that obtained from the burnish procedures being adopted.

Advocates also said that it does not agree with NHTSA'S claim that drivers rarely exceed a deceleration rate of 3.0 m/s(2) except in emergencies. Advocates claimed that typical stop-and-go braking deceleration rates, especially in congested urban expressway traffic with high speed differentials, can exceed this rate. NHTSA acknowledges that deceleration rates can exceed 3.0 m/s(2), but burnish is meant to simulate typical use, not these unusual circumstances.

MVMA, Ford, Chrysler, and GM requested a modification of initial brake temperature from < 100 °C (212 °F) to ''ambient temperature plus 100 °C.'' They believed that this would normalize the actual amount of brake burnish achieved and thus could reduce the amount of time required to run the burnish.

NHTSA notes that the burnish IBT is set at an upper limit to avoid overheating. Since the friction coefficient of the brake linings varies with the IBT, allowing a ''range of IBT upper limits'' is not an objective test condition.

NHTSA continues to believe that the burnish procedures being adopted in this final rule represents an efficient, representative burnish procedure that is consistent with the GRRF proposal.

Honda requested the agency clarify that the road surface condition specified