

Real-Time Smoothness Quick Reference Index

1. System Setup and Daily Startup

	Page No.
➤ Install RTS system according to manufacturer's instructions:	2
• Continuous power supply provided.	
• Cable connections tight and moisture-proof.	
• Cables routed clear of pinch points and able to accommodate leg barrel movements.	
• Cables routed along hydraulic lines and secured with zip-ties.	
➤ Ensure that distance measuring device (DMI) is connected, rotating freely, and clear from paver trackline obstructions.	4
➤ Check that sensors are installed at the correct height.	5
➤ Check that sensors are installed near to level with the profile of the slab.	5
➤ Check that sensors are installed so that they will track parallel to the edge of the pavement.	6
➤ Ensure that there is no interference from burlap, artificial turf drags, or auto-float.	7
➤ Operate RTS system according to manufacturer's instructions:	8
• Connect all cables.	
• Power up the system.	
• Check diagnostics to ensure that all system components are working.	
• Input starting station and direction of paving (positive or negative).	9
• Start collecting real-time profile data at the predetermined station, which should be at least 25 ft beyond the beginning of paving and after all initial adjustments have been made to the paver and/or trailing finishing pan.	10
• Set the measurement options to report IRI with a segment length of 100 ft.	12

3. System Daily Shutdown and Data Analyses

	Page No.
➤ Stop collecting profile data.	23
➤ Save and transfer profile data.	24
➤ Analyze real-time data in ProVAL.	26
➤ As soon as hardened profile data are available, compare and analyze both real-time and hardened profile data in ProVAL.	27

2. Using Real-Time Smoothness to Improve Initial Smoothness

	Page No.
➤ Monitor IRI results on a periodic basis (every 15 to 30 minutes).	13
➤ Monitor profile deviations for bumps and dips.	14
➤ Monitor profile data for systematic "patterns" of roughness that may be caused by a process in the paving operation.	14
➤ Strive to lower the real-time IRI through uniform paving processes.	14
➤ Adjust materials and paving processes as needed to lower the real-time IRI.	14
➤ Note the primary influences on real-time smoothness that may be appropriate for incremental adjustments:	15
• Concrete mixture workability, uniformity, and segregation; concrete delivery (load spacing); concrete head in front of paver.	15
• Stringline or stringless 3D digital model.	16
• Paver setup: paver trackline, angle of attack/lead/draft, paving speed, vibrator frequency, and vibrator height.	17
• Sensitivity of elevation controls (hydraulic, electronic, and/or stringless).	18
• Dowel baskets or inserted dowels for jointed pavements, transverse bar supports for continuously reinforced pavements.	22

Download the Real-Time Smoothness
Pocket Reference:

<http://www.cptechcenter.org/real-time-smoothness/>

