



Smoothness Specifications for New Asphalt Pavement at the Ministère des Transports du Québec

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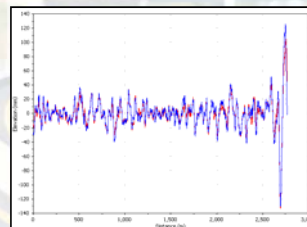
Laboratoire des chaussées
Ministère des Transports du Québec

Canada User Producer Group for Asphalt
CUPGA – november 18th 2011

Vancouver (BC)

Plan

1. Introduction
2. Equipment
3. 2011 Overview
4. MTQ Smoothness Clause
5. Coming Soon



Introduction

Specifications since 1995 at the MTQ

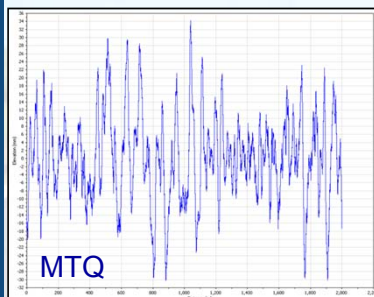
- Quality control requirements
- Good smoothness following construction work
- Longer lifespan
- User comfort and safety

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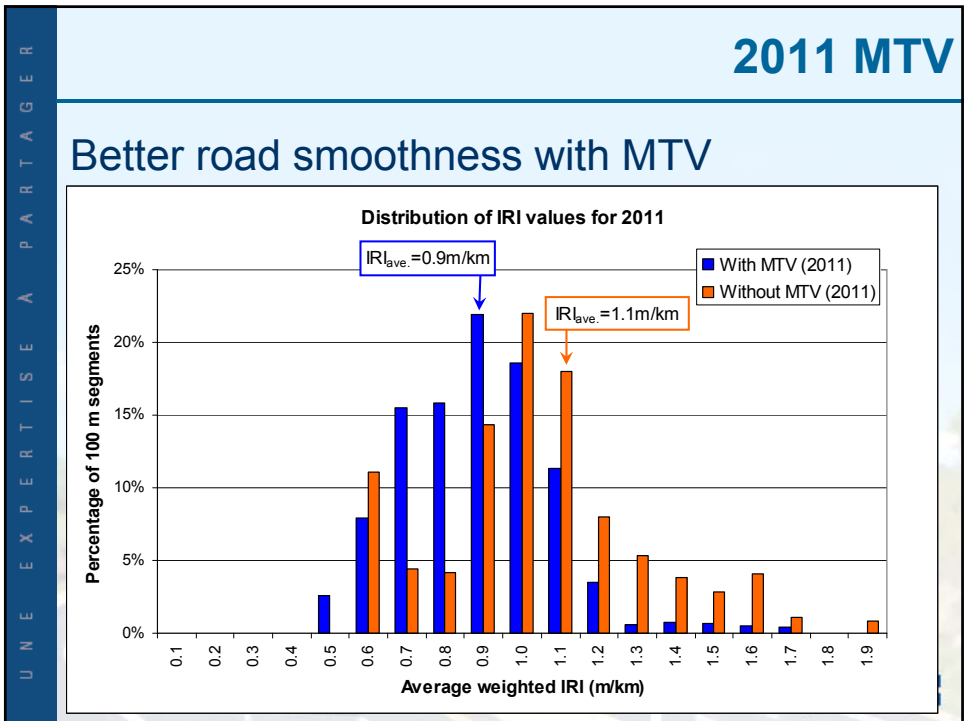
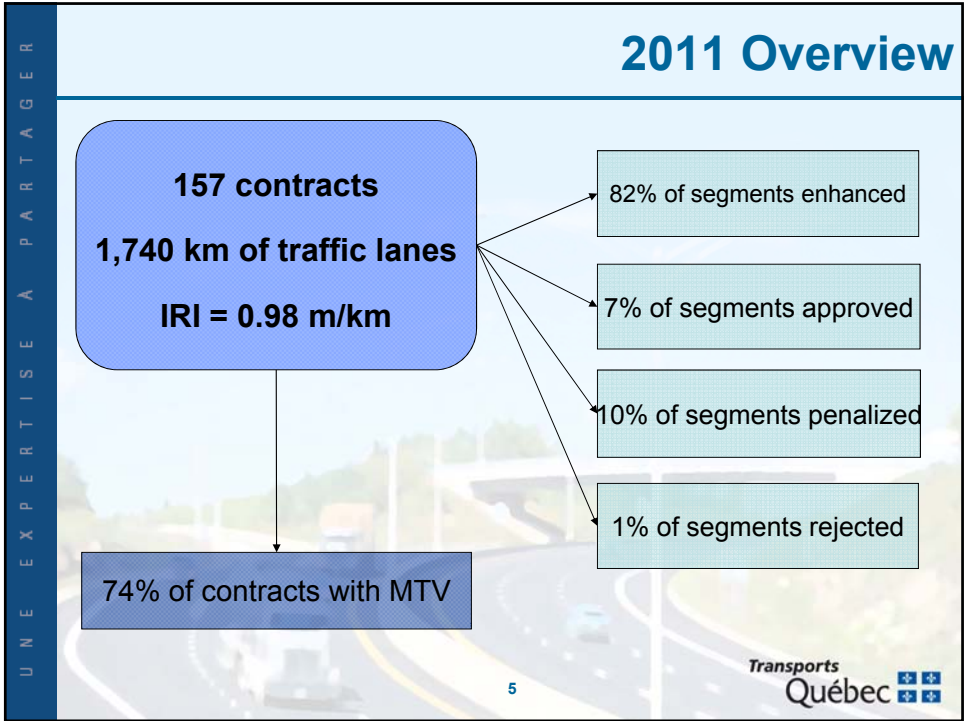
Equipment

- Inertial profiler
- Class 1 (ASTM E950) on asphalt pavement
- 2 Dynatest inertial profilers at the MTQ
- S = 70 km/h



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Standard Specifications

- Standard specifications for hot mix smoothness clauses:



Hot mix road surfacing smoothness

WWW.MTQ.gouv.qc.ca

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Operation

1. End of hot mix surfacing work
2. Timeline of 14, 21 or 28 days for the smoothness survey, depending on the contract
3. **Smoothness surveys** = 2 passes per traffic lane


Contractor's presence allowed

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Data Processing

4. IRI calculation (m/km) per 100 m segment



5. **Best** of 2 passes retained, in favour of the contractor
6. Application of criterias ➔

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Smoothness Specifications

MTQ specifications on new asphalt pavements
– Average IRI (truncated) of the two wheel tracks


IRI _{100m} (m/km)	\$	
≤ 0.8	100	} Positive adjustments
0.9	50	
1.0	20	
1.1	10	
1.2	0	
1.3	-10	} Negative adjustments
1.4	-20	
1.5	-100	
1.6	-500	
1.7	-1,000	
≥1.8	Reject	} Corrective work: overlay or fine grinding

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Exclusion

- 100 m lot excluded if
 - Obstacle present
 - Manholes and catch basins in the traffic lane
 - Bridge
- Area subject to specifications:
 - 10 m after the start of work joint
 - 10 m before the end of work joint


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100 m Lots

* May start more than 10 m away


The diagram illustrates a road layout with work joints at 0 + 000 and 0 + 500. Above the road, stationing markers are shown at 0 + 010, 0 + 110, 0 + 210, 0 + 310, 0 + 410, and 0 + 490. Vertical lines represent 100m lots. The first lot (0+010 to 0+110) is 100m long and has a green checkmark. The second lot (0+110 to 0+210) is 100m long and has a green checkmark. The third lot (0+210 to 0+310) is 100m long and has a red X. The fourth lot (0+310 to 0+410) is 100m long and has a red X. The fifth lot (0+410 to 0+490) is 80m long and has a red X. A 10m obstacle (manhole) is located between 0+310 and 0+410. A 10m* distance is indicated between 0+000 and 0+010, and another 10m distance is indicated between 0+490 and 0+500.

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- Changes to requirements every 100 m:
 - Positive and negative adjustments
 - Rejection threshold
- To
 - Update the criteria from 1995
 - Take into account the best IRIs with the MTV

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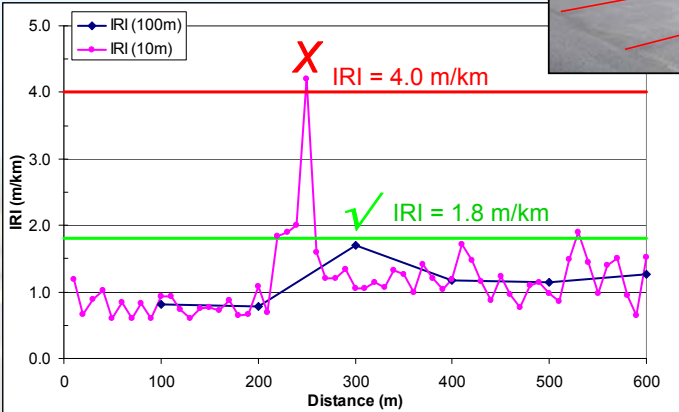
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Addition of the localized roughness criterion

- 10 m lot rejected if $IRI_{10m} \geq 4 \text{ m/km}$

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For more information

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