



Paving in an Urban Environment

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HRM Road Rehab Information



- To address all streets below a 7.5 SDI (Surface Distress Index) rating would cost ~\$300 million
- HRM has an annual budget of \$15 to \$20 million

HRM Road Work 2006-2010



Type Work	YEAR					TOTAL
	2006	2007	2008	2009	2010	
	km.	km.	km.	km.	km.	km.
Thin Overlay	13.06	14.34	21.20	18.37	10.70	77.67
Resurfacing	13.91	14.09	23.22	24.26	13.90	89.38
Renewal	5.62	7.65	7.03	14.36	6.70	41.36
New Paving	3.08	4.61	10.46	6.21	2.70	27.06
Micro surfacing	26.11	29.22	41.98	27.90	23.13	148.34
TOTAL	61.78	69.91	103.89	91.10	57.13	383.81

Definition of Quality



- [Peter Drucker](#): "Quality in a product or service is not what the supplier puts in. It is what the customer gets out and is willing to pay for."
- [American Society for Quality](#): "A subjective term for which each person has his or her own definition. In technical usage, quality can have two meanings:
 - a. The characteristics of a product or service that bear on its ability to satisfy stated or implied needs;
 - b. A product or service free of deficiencies."



Urban Paving Issues

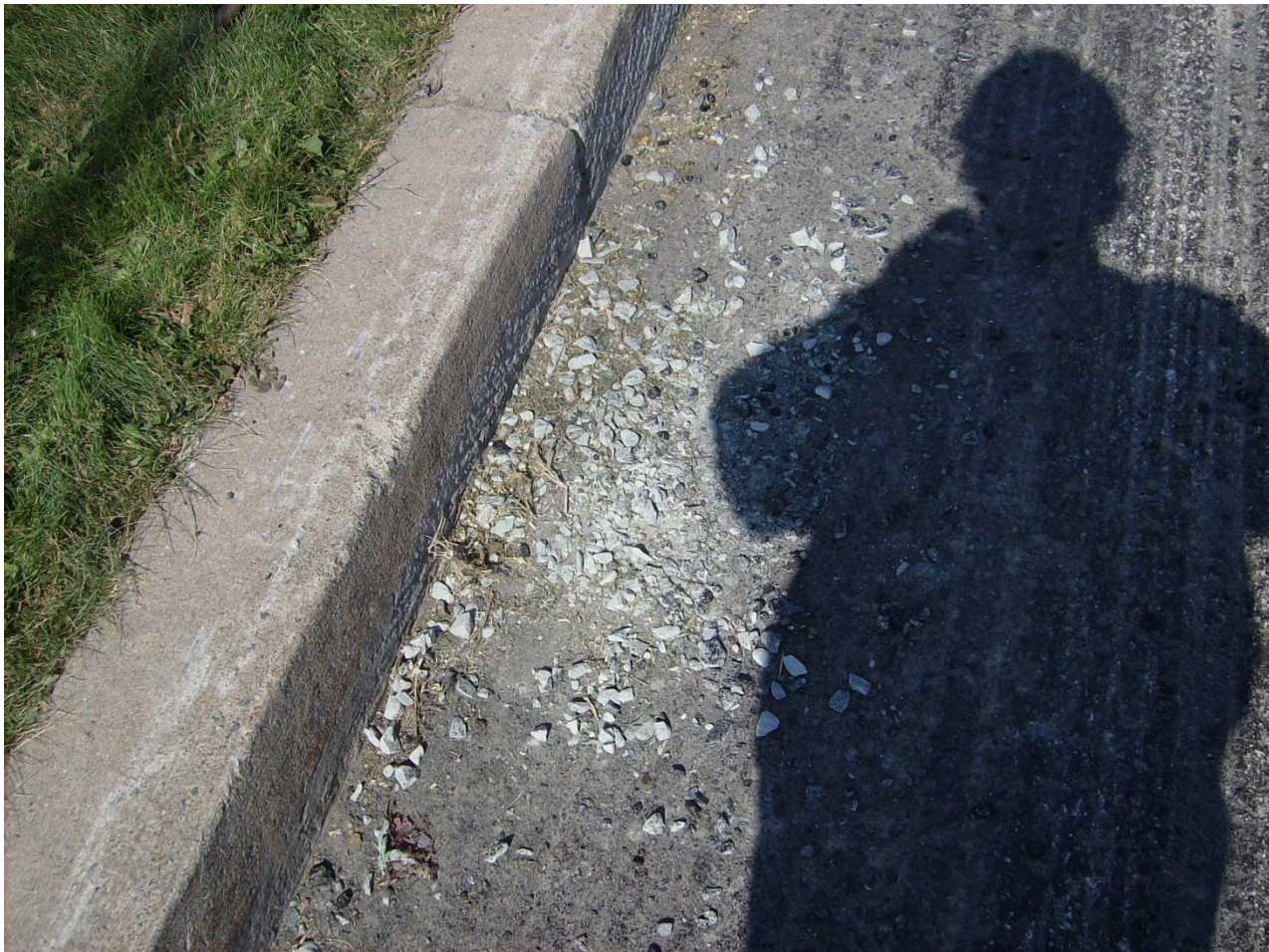
- Traffic and pedestrian control
- Varying existing pavement profile conditions
- Driveway ramps
- Longitudinal joints
- Noise By-Law
- Restricted streets
- Tack coat application
- Hardware adjustments
- Pavement marking
- Asphalt compaction and thickness
- Surface preparation
- Pneumatic rollers
- Use of Tok tape or extruded joint material (XJB)
- Echelon paving
- Mix designs
- Asphalt sampling
- Paving intersections
- Segregation of asphalt
- Production vs. placement rate
- Overhead utilities
- Traffic loops
- Crowning of asphalt spreader / slope level

Some HRM Key Issues

- Site Conditions – Surface Cleanliness
- Traffic Volumes & Restricted Streets
- Compaction & Thickness Compliance
- Longitudinal Joints
- Tack Coat Application



Surface Cleanliness



Surface Cleanliness



Surface Cleanliness





Traffic Volumes



- HRM's Busiest Street (Top 3)



Windmill Rd 46800

Bayer's Rd. 42078

Lacewood Dr. 37798



- HRM's Less Busy Streets

Portland Hills Dr. 2632

Crown Dr. 786

Dakin Dr. 120



Street Classifications



- Local Residential – < 3000 vpd

- Arterial - > 20 000 vpd

- Restricted Streets (7-9 am 4-6 pm)

<http://www.halifax.ca/procurement/documents/TrafficControlManualSupplement.pdf>

Making Sure Signage is Clear



Compaction



Year	Contractor	Overall Average	Type C Average	Type B Average	Count	% above 92
2006	All Cores	93.63	93.26	94.18	384	79.95
2007	All Cores	93.55	93.14	94.15	473	82.03
2008	All Cores	93.24	93.10	93.44	650	78.00
2009	All Cores	93.66	93.59	93.79	707	87.84

Longitudinal Joints

- Contractor workmanship improving over the last five (5) years
- Echelon paving being implemented wherever possible
- Finer mixes (and warm mixes) placed on suitable streets
- Offsetting joints 150 mm between lifts and minimizing exposed joints



Tack Distribution



Tack Distribution




Hardware Adjustments

Adjustable Frame and Cover

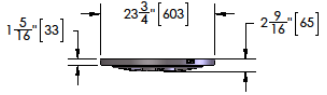


The Adjustable[®]

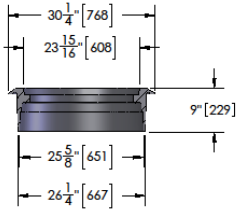


MODEL: AJ610 with conical guide frame

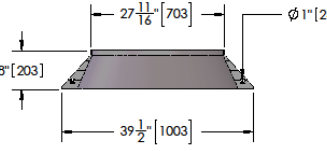
R-10 Cover
142 lb 64 Kg
Grey Cast Iron
ASTM A48 CL30



AJ610 Frame
246 lb 112 Kg
Ductile Iron
ASTM A536 grade 65-45-12




AJ633 Coneguide
136 lbs 62 Kg
Grey Cast Iron
ASTM A-48 CL30



Total weight: 524 lb , 238Kg

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CERTIFIED ISO 9001 : 2000



2008-11-13

Before



After



The End

