



# PRODUCT FORMULATION AND SPECIFICATION SHEET

Trade Name:

December, 2011

## PROPATCH™ (PERMANENT HIGH PERFORMANCE COLD PATCH)

### Product Description:

**ProPatch™ (Permanent High Performance Cold Patch)** is a cutback asphalt product that has been designed and developed using the best available materials. It is produced with a specially tested and specified type of aggregate which is then mixed with a thorough blend of our quality controlled bulk bituminous liquid. This mix can be applied in sub-zero temperatures, will adhere in wet conditions, offers a permanent repair and can be used from an uncovered stockpile for up to 24 months.

### Ecological Classification:

Based on the Ecotoxicity Hazard Classification Categories from the US Fish and Wildlife Services, our ProPatch™ **(Permanent High Performance Cold Patch)** has been tested and classified as relatively harmless to aquatic life, using the EPA 821-R-02-021 and WAF test methods (ASTM 2004, OECD, 2000) by "AquaTox Testing & Consulting Inc."

### 1- Aggregates

Will consist of a minimum 80% crushed, washed or screened, limestone or approved equal that is free from excessive fines, dust and foreign material.

### Sieve Test (ASTM C-136):

Sieve Size		Minimum	Maximum
Sieve No.	Size	% Passing	% Passing
3/8"	9.5 mm	100.0	100.0
4	4.75	20.0	100.0
8	2.36	1.0	60.0
16	1.18	0.0	50.0
50	0.30	0.0	20.0
200	0.075	0.0	5.0

### Soundness Test (ASTM C-88):

**Max 12.0%**

(Soundness loss after 5 cycles of the Soundness test using sodium sulphate)

**Absorption and Relative Density (ASTM C-127, 128):**

Maximum absorption <2.0%  
Relative Density 2.5 to 2.75

**2- Bituminous Liquid**

The bituminous liquid shall be modified cut back asphalt containing **ProPatch™ (Permanent High Performance Cold Patch) special additive**. It will meet or exceed the following test requirements of **ProPatch™ (Permanent High Performance Cold Patch)** bulk liquid.

Test	Method	Specification	
		Min	Max
Kinematic Velocity at 60°C, mm <sup>2</sup> /s	ASTM D-2170	300	4000
Flash Point, TOC, °C	ASTM D-1310	94	-
Distillation Test (Distillate % of total sample, to 360°C)	ASTM D-402	None	
		To 190°C	
		To 225°C	
		To 260°C	
		To 316°C	
Residue from Distillate to 360°C, % by Volume		72	95
<u>Tests on Residue:</u>			
Penetration at 25°C, 100g, 5 sec	ASTM D-5	200	-
Ductility at 25°C cm/min cm	ASTM D-113	100	-
Absolute Viscosity, 60°C, Poise	ASTM D-2171	125	425
Solubility in Trichloroethylene, %	ASTM D-2042	99.0%	

**Mix Formula:**

Mix Formula	4.5% to 6.0% (Per finished ton (2000lbs) of mixed materials and depending on the absorptive rate of the aggregate)
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**Finished Product Test:**

The finish **ProPatch™ (Permanent High Performance Cold Patch)** shall be subjected to the following tests:

Test	Method	Specification
<b>Stripping:</b>		
Boiling test	MTO 1153-08	Pass 75% Coating
Coating and stripping test for both dry and wet aggregates	ASTM D-1664	Pass 95% Coating
<b>Extraction</b>	ASTM D-2172 / LS-282 or LS-291	3.25% to 6.0%
<b>Cohesion Index, -10oC%</b>	MTO LS-290	Min 60
<b>Workability</b>	MTO LS-289	Flexible and Cohesive to 14°F / -10°C