

ASPHALT CUTBACKS

PERMA-PATCH – COLD MIX

PRODUCT DESCRIPTION

Perma-Patch Cold Mix is a plant mixed, high quality pavement patching material composed of 100% crushed aggregate and a modified liquid asphalt binder. This is a uniform patch material that retains its adhesive properties during wet ambient conditions and remains flexible and cohesive at low temperatures.

GENERAL PRODUCT FEATURES

- Mixed in conventional drum or batch hot-mix plant or a pugmill
- May be used immediately after manufacture or stockpiled for two years
- Remains pliable and workable in stockpiles
- Excellent aggregate coating ability
- High residual binder content – provides durability
- Unique binder formulation provides resistance to stripping and bleeding
- Rapidly develops stability enabling area to be open to traffic immediately
- Flexible and cohesive at low temperatures

RECOMMENDED USE

Perma-Patch Cold Mix is used in the partial or full depth repair of asphalt, concrete or surface-treated roads. **Perma-Patch** Cold Mix combines high stability, durability and flexibility to provide a long-lasting, “permanent” pothole repair material.

MIX COMPONENTS

- Asphalt Binder – **Perma-Patch** Modified Asphalt Binder. The modified liquid asphalt binder shall be provided by **McAsphalt Industries Limited**.
- Aggregate - The aggregate should be 100% crushed limestone or an equivalent meeting ASTM C-136. Recommended gradation and physical properties are as follows:

SIEVE SIZE mm	SUMMER GRADE	WINTER GRADE
9.5	90 – 100	90 – 100
4.75	30 – 80	30 – 75
2.36	5 – 30	5 – 30
1.18	0 – 10	0 – 10
0.075	0 – 2	0 – 2

PHYSICAL PROPERTIES

Soundness Loss	12% Max.
Los Angeles Abrasion	40% Max.
Absorption	1 – 2%
Specific Gravity	2.55 – 2.75%
Soft Aggregates	3% Max.

PLANT MIX OPERATIONS

The **Perma-Patch** Cold Mix shall consist of 100% crushed aggregates and **Perma-Patch** Modified Asphalt Binder as indicated in the proposed job mix formula.

The preferred mixing ratio shall be 5.5% **Perma-Patch** Modified Asphalt Binder or 110 lb per finished ton (2,000 lb) of **Perma-Patch** Cold Mix. Mix designs should be formulated prior to initial production and each time the aggregate sources are changed.

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The job mix formula shall provide:

- Aggregate gradation band and aggregate type
- Bituminous material – amount and type
- Temperature ranges for material preparation
- **Perma-Patch** Modified Asphalt Binder is added to the aggregate in the mixing chamber of the pugmill where it shall be wet-mixed until 100% coating has been achieved.

The **Perma-Patch** Cold Mix is to be produced through a conventional hot-mix asphalt plant (batch or drum) or an approved modified pugmill.

WHEN PRODUCING IN A HOT-MIX PLANT:

- The **Perma-Patch** Modified Asphalt Binder shall not be heated above 110°C (230°F).
- The aggregate should be heated to a minimum of 65°C (150°F) and a maximum of 70°C (160°F). It is then dry-mixed in the pugmill for 15-20 seconds.
- It is important not to overheat the aggregate or overmix the finished blend since this could lead to reduced low temperature workability.
- The **Perma-Patch** Modified Asphalt Binder is added to the pugmill where it is wet-mixed with the heated aggregate for 30 seconds. The mix discharge temperature should range from 55°C – 60°C (130°F – 140°F).

WHEN PRODUCING IN A MODIFIED PUGMILL PLANT:

- The **Perma-Patch** Modified Asphalt Binder shall be delivered to the manufacturing site at a minimum of 110°C (230°F). Ambient temperatures shall be no less than 15°C (60°F) and rising.
- The aggregate shall have a moisture content of no more than 4%.

CERTIFICATION OF QUALITY

McAsphalt Industries Limited is accredited to the quality standard **ISO 9001:2008** and to the environmental standard **ISO 14001:2004**.

Each lot of **Perma-Patch** is produced using the strictest quality, safety and environmental guidelines. Each production lot is tested to ensure it meets or exceeds all performance requirements, and it is delivered with a Certificate of Analysis.

PRODUCT SUPPORT

With the **MCA Advantage**, you get a partner and advisor who will consult with you about designs, specifications, technical services, processes and material selection. By developing innovative, custom-designed products that offer additional benefits, such as peak performance in unique conditions, improved field performance, greater environmental and health benefits, the **MCA Advantage** provides significant long-term cost savings, resulting in lower “total cost of ownership.”



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