

Horizontal Rapid Set Concrete Patch Material

Date last edited: 04/29/2025

Manufacturer	Product Name	Approval Date
Sika Corporation	SikaQuick 2500 ¹	3/6/2025
CTS Cement Manufacturing Corp.	Rapid Set DOT Repair Mix ¹	4/29/2025
CTS Cement Manufacturing Corp.	Rapid Set DOT Concrete Mix ¹	4/29/2025
Mapei Corporation	Planitop 18 ¹	4/29/2025
Mapei Corporation	Planitop 18 TG ¹	4/29/2025
SilPro LLC	SilproRapid ¹	3/6/2025
Euclid Chemical	Versaspeed RMC ¹	3/7/2025

WisDOT evaluates submittals in accordance with the application process for Horizontal Rapid Set Concrete Patch Material. To apply, see updated policy beginning on page 2 for additional information. Products from this list should only be used for applications within the manufacturer's intended purpose.

Notes:

1) Meets 3-hour compressive strength requirement in [Rapid Set Deck Repair Bridge Special Provision](#)

Contact:

DOTProductSubmittal@dot.wi.gov



Approved Product List Application Process for Horizontal Rapid Set Concrete Patch Material

Wisconsin Department of Transportation (WisDOT) requires horizontal rapid set concrete patch materials used in concrete projects from the approved product list (APL). This APL approval process covers materials with cementitious, polymer-modified cementitious, and fully polymeric continuous phase components. Products on this list are not to be used for full-depth repairs for structural applications.

Approval Process

- To apply for WisDOT's APL process for horizontal rapid set concrete patch material, the manufacturer/supplier must submit the required information listed below for WisDOT's review:
 - Safety Data Sheet
 - Technical Data Sheet
 - American Association of State Highway and Transportation Officials (AASHTO) Product Evaluation & Audit Solutions (formerly NTPEP) or any accredited (AASHTO or Cement and Concrete Reference Laboratory (CCRL)) independent laboratory test data showing the rapid set concrete set concrete patch material has met or exceeded the requirements in outlined in the material property requirements section.
 - Horizontal rapid set concrete set concrete patch materials will be evaluated with the aggregates included in the samples (extended form). The tests must be conducted with coarse and fine aggregates added per the manufacturer's recommendations for each material.
 - If submitting an independent laboratory test data, include the AASHTO/CCRL certification of the testing laboratory.
 - Manufacturer's installation instructions including surface preparation, bonding, and curing requirements for the product seeking approval.
 - Primary point of contact for the submitted product including name, email address, phone number, and mailing address.
- The submitted test data must be less than five years old. Submit the above required information to DOTProductSubmittal@dot.wi.gov.
- By applying, the manufacturer/supplier certifies that they have reviewed the standards/requirements, and their product meets the requirements. WisDOT may reject an APL submittal without further review if WisDOT determines that the product does not meet standards/requirements.
- Applications will be reviewed within 4 weeks of submittal and when the review is completed, manufacturers/suppliers will be notified. Approved products will be listed on the department's APL.

Material Property Requirements

Cementitious and Polymer-modified Cementitious Materials

- The Cementitious and Polymer-modified Cementitious rapid set concrete patch material must meet the testing requirements as specified in Table 1.

Table 1. Cementitious and Polymer-Modified Cementitious Material Test Requirements

Test	ASTM/AASHTO Standard	Age/Procedure	Minimum Requirements
Compressive Strength (psi)	ASTM C39/ AASHTO T22	3 hours	$\geq 2,000$
		24 hours	$\geq 5,000$
Freeze-Thaw Durability	ASTM C666/ AASHTO T161	Procedure A, Durability Factor	90% at 300 cycles
Length Change (%)	ASTM C157/ AASHTO T160	Water and air, 28 days	Maximum +/- 0.15
Bond Strength in Direct Tension (psi)	ASTM C1583	28 days	≥ 300
Initial Set Time (min)	ASTM C403	Initial set (500 psi) time	≥ 15
Rapid Chloride Permeability (Coulombs)	ASTM C1202	28 days	$\leq 2,500$

Fully Polymeric Materials

- The Fully Polymeric rapid set concrete patch material must meet the testing requirements as specified in Table 2.

Table 2. Fully Polymeric Material Test Requirements

Test	ASTM/AASHTO Standard	Age/Procedure	Minimum Requirements
Compressive Strength (psi)	ASTM C579	3 hours	$\geq 2,000$
		24 hours	$\geq 5,000$
Freeze-Thaw Durability	ASTM C666/AASHTO T161	Procedure A, Durability Factor	90% at 300 cycles
Linear Shrinkage	ASTM C531	Maximum linear length change at 7 days (%)	Maximum +/- 0.10
Coefficient of Thermal Expansion (CTE)		Coefficient of Thermal Expansion	2×10^{-6} to 8×10^{-6}
Bond Strength in Direct Tension (psi)	ASTM C1583	28 days	≥ 300
Initial Set Time (min)	ASTM C403	Initial set (500 psi) time	≥ 15
Rapid Chloride Permeability (Coulombs)	ASTM C1202	28 days	$\leq 2,500$

Compliance

- To remain on the WisDOT APL, the manufacturer/supplier must reapply every 5 years.
- The department may request re-compliance at any time. WisDOT may request a sample of the material to test for conformance and compare the results with the vendor test data. The verification testing sample will be taken by a WisDOT project engineer.
- The manufacturer/supplier shall be responsible for quality control of the product. The manufacturer/supplier shall also sample and test the material as necessary during production to ensure that all material conforms to the specifications as listed above and is consistent with the sample of material that was tested and approved. When requested by the Department, the manufacturer/supplier will submit the quality control data within 30 days. Any change in the product will require a requalification at the manufacturer's/supplier's expense.

Non-Compliance

- WisDOT will continue to regard this approval valid for 5 years unless/until any of the following conditions arise:
 - If the manufacturer/supplier changes the product physical or chemical properties without notifying WisDOT.
 - The product samples audited/tested by WisDOT do not meet the requirements as specified in this document.
- Manufacturers/suppliers are required as a condition of approval to inform WisDOT of any of the above conditions as soon as they become aware of them.

Correspondence

If the name and/or address of the contact person in your company for this correspondence have changed, or if you have questions or need further information, please contact us via email DOTProductSubmittal@dot.wi.gov.