

Approved/Qualified Products

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Concrete anchorages - threaded rod applications

Products listed in the following table are approved for use on MnDOT projects unless otherwise indicated. Products prohibited from use in sustained tension applications may be used for applications which are not considered to carry sustained tension loads. Adhesives permitted for use with sustained tension applications may be used for all applications (sustained or non-sustained tension). All bar types and hole types marked with "X" below are approved for use under the conditions stated in the table. All anchorages must be field tested as required by the contract regardless of nominal pullout requirements. Refer to project specifications and plans to determine if the anchors are in sustained tension.

Permitted sustained tension applications will be specified in an upcoming technical memorandum. Until publication of the memorandum, please contact [Joe Black](#) for permitted uses of anchorages in sustained tension.

Guidance

- [Qualification process \(PDF\)](#)

Concrete anchorages

- [Reinforcing bar applications](#)
- [Threaded rod applications](#)

Contact

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Min. uncracked characteristic bond strength of 1 KSI and min. cracked characteristic bond strength of 0.5

The following adhesives are **permitted** for use in sustained tension applications

Product	Manufacturer	Approval expiration	Approved threaded rod diameters						Hole type		
			1/2"	5/8"	3/4"	7/8"	1"	1 1/4"	Hammer-drilled	Core-drilled	
Ultrabond 365CC	Adhesive Technology Corp	4/26/2020	X	X	X					X	

Min. uncracked characteristic bond strength of 1.5 KSI and min. cracked characteristic bond strength of 0.75

The following adhesives are **permitted** for use in sustained tension applications

Product	Manufacturer	Approval expiration	Approved threaded rod diameters						Hole type		
			1/2"	5/8"	3/4"	7/8"	1"	1 1/4"	Hammer-drilled	Core-drilled	
ULTRABOND HS-1CC	Adhesive Technology Corp	10/22/2021	X							X	

Concrete anchorages - reinforcing bar applications

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Reinforcing bar applications

The following adhesives are **permitted** from use in sustained tension applications

Product	Manufacturer	Approval expiration	Rebar Designations								Hole type	
			#4	#5	#6	#7	#8	#9	#10	Hammer-drilled	Core-drilled	

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Epoxies (non-bridge applications)

Updated July 24, 2018

Epoxy Bonding Agents Used to bond fresh concrete to old concrete	
Product Name	Manufacturer
Crackbond LR-321	Adhesives Technology
ASF-1000	Adhesives Technology
SLV-302	Adhesives Technology
CRACKBOND 2100 MV	Adhesives Technology
Epoxy Crack Sealers Used for crack sealing in non-load bearing applications.	
Crackbond LR-321	Adhesives Technology
SLV-302	Adhesives Technology
CRACKBOND 2100 MV	Adhesives Technology
Epoxy Crack Sealers Used for crack sealing in load bearing applications.	
Crackbond LR-321	Adhesives Technology
SLV-302	Adhesives Technology
CRACKBOND 2100 MV	Adhesives Technology
Epoxy Penetrant Sealers Used to seal concrete surfaces which have received moderate rain damage or have a weak surface.	

Guidance

- [Qualification Process](#)

Contact

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Concrete anchorages

Products on this list are not approved for ornamental railings or bridge applications. Not approved for sustained tensile-load (hanging from a ceiling) overhead applications. For non-bridge applications requiring an ultimate pullout of less than 5000 pounds. See [Bridge Products](#) list for anchorages approved for ornamental rail, safety barriers, and bridge applications. Larger diameter anchor rods or more embedment may be required. Chemical anchorage will be required on all horizontal applications.

Concrete Anchorages (7/19/2018)			
Product	Manufacturer	Type	Minimum Diameter and Minimum Embedment Depth for up to 5000 pounds
Ultrabond HS-1CC	Adhesives Technology Corp.	Adhesive/Epoxy	3/8" diameter, 3-1/2" embedment.
Ultrabond HS200	Adhesives Technology Corp.	Adhesive/Epoxy	3/8" diameter, 3-1/2" embedment. Use when temperature is below 60 F and allow 48 hours before loads.
Ultrabond 1	Adhesives Technology Corp.	Adhesive/Epoxy	3/8" diameter, 3-1/2" embedment.
Ultrabond 365CC	Adhesives Technology Corp.	Adhesive/Hybrid	3/8" diameter, 2" embedment.

Guidance

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