

State of West Virginia Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

Request for Quotation

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ADDRESS CORRESPONDENCE TO A HENTION OF

BUYER 33 304-558-2402

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FORM TECH CONCRETE FORMS INC. 28 WINFIELD Rd. SAINT ALBANS, WV 25177 DIVISION OF HIGHWAYS DISTRICT THREE

624 DEPOT ST PARKERSBURG, WV 26101

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## GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

- 1. Awards will be made in the best interest of the State of West Virginia.
- 2. The State may accept or reject in part, or in whole, any bid.
- 3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
- 4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
- 5. Payment may only be made after the delivery and acceptance of goods or services.
- 6. Interest may be paid for late payment in accordance with the West Virginia Code.
- 7. Vendor preference will be granted upon written request in accordance with the West Virginia Code.
- 8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
- 9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
- 10. The laws of the State of West Virginia and the Legislative Rules of the Purchasing Division shall govern the purchasing process.
- 11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
- 12. BANKRUPTCY: In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
- 13. HIPAA BUSINESS ASSOCIATE ADDENDUM: The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.htm and is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
- 14. CONFIDENTIALITY: The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf.
- 15. LICENSING: Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
- 16. ANTITRUST: In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or Fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

#### **INSTRUCTIONS TO BIDDERS**

- 1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
- 2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
- 3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
- 4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
- 5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).



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28 WINFIROD Rd

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State of West Virginia Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

FORM TECH CONCRETE FORMS, INC.

# Request for Quotation

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DIVISION OF HIGHWAYS DISTRICT THREE

624 DEPOT ST PARKERSBURG, WV 26101

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State of West Virginia Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

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2019 Washington Street East
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Charleston, WV 25305-0130

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DIVISION OF HIGHWAYS DISTRICT THREE

624 DEPOT ST PARKERSBURG, WV 26101

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PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: CONTACT PERSON (PLEASE PRINT CLEARLY):

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

TELEPHONE SIGNATURE

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DIVISION OF HIGHWAYS DISTRICT THREE

624 DEPOT ST PARKERSBURG, WV 26101

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#### Request for Quotation Specifications

Purpose: To establish an open end contract to provide the West Virginia Division of Highways, District Three Bridge Department with bags of packaged, dry, rapid-hardening cementitious materials for concrete repairs.

#### SCOPE

- This specification covers packaged, dry, cementitious mortar or concrete materials for rapid repairs to hardened hydraulic-cement concrete pavements and structures. Materials that contain organic compounds, such as bitumens, epoxy resins, and polymers, as the principal binder are not included.
- Packaged, dry, concrete material contains aggregate of which at least 5% by mass of the total mixture is retained on a 9.5-mm [3/8-in.] sieve.
- Packaged, dry, mortar material contains aggregate of which at least 5% by mass of the total mixture is retained on a 9.5-mm [3/8-in.] sieve.
- Aqueous solutions, aqueous emulsions or dispersions may be included as components of the
  packaged materials. The manufacture may specify that these liquids are to replace some or all of the
  mixing water.
- Aggregates must be included as a component of the packaged materials. The manufacturer may recommend job site addition of specific amounts and types of additional aggregates to his product for some uses. However, such reformulated products are not within the scope of this specification.
- The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.
- The following safety hazards caveat pertains to the test methods portion of this specification: This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

#### Performance Requirements

The materials shall comply with the perfomance requirements in Table 1.

¹This specification is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommitee C09.43 on Packaged Dry Combined Materials.

Current edition approved Dec. 1, 2009. Published January 2010. Originally approved in 1980. Last previous edition approved in 2008 as C928/C928M - 08. DOI: 0.1520/C0928_C0928M-09.

Product shall perform as Type R-3

TABLE 1 Performance Requirements^A

	3 h	1 day	7 days	28 days
<u> </u>	<u> </u>	i day	/ uays	20 days
Compresive Strength,				
min, Mpa [psi]	21 [3000]	35 [5000]	35 [5000]	8
Bond Strength, min, Mpa				
[psi]		7 [1000]	10 [1500]	
Length change, base on		, ,		
length at 3 h, max, %		•		
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or mortar ^c			slump,	mortar,min
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R-3 consistency at 5 min	after			
addition of mixing liqui	d		75 [3]	100
Scaling resistance to dei	cing			
chemicals after 25 cycle freezing and thawing	es of			
Concrete, max visual rati	na		2.5	
	· _		5 kg/m² [1 lb	/# ² 1
Mortar, max scaled mater	riai		o kg/m [1 ib	ur 1

^A It is recognized that other characteristics of rapid-hardening concrete repair materials might need consideration. Such characteristics might be necessary in some environments and applications; however, to impose specification limits on all products is considered beyond the scope of this specification. Optional considerations with suggested methods of test may include tests for the following:

Time of setting
Flexural strength
Freeze thaw
Sulfate expansion
Test Method C403/C403M
Test Method C78
Test Method C666/C666M, Procedure A
Test Method C1012

Vendors bidding "or equal" merchandise must provide complete manufacturer's literature demonstrating adherence to the mandatory requirements contained herein.

<u>DELIVERY</u>: The above material is to be delivered to the WV Division of highways, District Three lot, located at 1423 Mill Run Road, Parkersburg, WV 26104 (Quonset Hut). The Divison of Highways will only ask for complete truckloads to be delivered.

Vendor to notify District Three Bridge Engineer, Cliff Essig, two (2) days prior to delivery at (304) 420-4674.

^B The strength at 28 days shall be not less that the strength at 7 days.

^c Slump of flow requirements are waived for materials intended for vertical or overhead applications.

^D A 250-mm [10-in.] square spalled to an average depth of 3 mm [1/8 in.] for 100% of its surface would have about 10 kg/m² [2.0 lb/ft²] scaled material.



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Compaction
Division Approved Source/Product Listing
Evidence Of Inspection
Maps To Facility
Material Procedures
Material Procedures Updates
New Product Evaluation Procedure
Organizational Structure
Quality Assurance System
Technician and Inspector Certification Program
Tool Box

**Upcoming Materials** Contracts

Transportation > Highways > Materials > 715.4 - Approved Patching Materials for Portland Coment Concrete

#### 715.4 - Approved Patching Materials for Portland Cement Concrete

Effective: October 14, 2010

Contact: John Fowler (304) 558-9889 Email: John,W.Fowler@wv.gov

Materials Code: 1941

715.4.1 Cementitious Materials for Concrete Patching

Brand Name	Manufacturer	Type(s)	Approved Lab Number
Duracrete II	Kaufman Products (K098A)	R-1, R-2 & R-3	1380730
ChemSpeed 65	Chem Masters (C339A)	R-1, R-2, & R-3	1380461
HD-50 Heavy Duty Concrete Patch	Dayton Superior Corp. (D013A)	R-1, R-2	1390166
Euco-Speed MP	Euclid Chemical (E091A)	R-1, R-2, & R-3	1380589
Commerical Grade Fast Set Non-Shrink Grout	Quickrete (Q001A)	R-1, R-2, & R-3	1390142
Commercial Grade Fast Set DOT Mix	Quickrete	R-1, R-2, & R-3	1390143
Commercial Grade Fast Set Repair Mortar	Quickrete	R-1, R-2	1390141
Thoroc 10-60	BASF Construction Chemicals (B266A)	R-1, R-2	1395329
Thoroc 10-61	BASF Construction Chemicals (B266A)	R-1	1395327
Set 45	BASF Construction Chemicals	R-1, R-2, & R-3	1392904
Hydrozo Silane 40 VOC	BASF Construction Chemicals (B266A)		1395330

Contact Us   Site Map   Disclaimer E.E.O./AFFIRMATIVE ACTION EMPLOYER	Pavemend SL	Cera Tech, Inc. (C425A)	R-1, R-2, & R-3	1394667	
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715.4.2 Non-Cementitious Materials for Concrete Patching

Brand Name	Manufacturer	Approved Lab Number



Designation: C928/C928M - 09

#### Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs¹

This standard is issued under the fixed designation C928/C928M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (e) indicates an editorial change since the last revision or reapproval.

#### 1. Scope[®]

1.1 This specification covers packaged, dry, cementitious mortar or concrete materials for rapid repairs to hardened hydraulic-cement concrete pavements and structures. Materials that contain organic compounds, such as bitumens, epoxy resins, and polymers, as the principal binder are not included.

1.1.1 Packaged, dry, concrete material contains aggregate of which at least 5 % by mass of the total mixture is retained on a 9.5-mm [%-in.] sieve.

1.1.2 Packaged, dry, mortar material contains aggregate of which less than 5 % by mass of the total mixture is retained on a 9.5-mm [%-in.] sieve.

1.2 Aqueous solutions, aqueous emulsions or dispersions may be included as components of the packaged materials. The manufacturer may specify that these liquids are to replace some or all of the mixing water.

1.3 Aggregates must be included as a component of the packaged materials. The manufacturer may recommend job site addition of specific amounts and types of additional aggregates to his product for some uses. However, such reformulated products are not within the scope of this specification.

1.4 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.5 The following safety hazards caveat pertains to the test methods portion of this specification: This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard

to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use,

#### 2. Referenced Documents

2.1 ASTM Standards:2

C39/C39M Test Method for Compressive Strength of Cylindrical Concrete Specimens

C78 Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)

C109/C109M Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)

C143/C143M Test Method for Slump of Hydraulic-Cement Concrete

C157/C157M Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete

C192/C192M Practice for Making and Curing Concrete Test Specimens in the Laboratory

C403/C403M Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance

C494/C494M Specification for Chemical Admixtures for Concrete

C666/C666M Test Method for Resistance of Concrete to Rapid Freezing and Thawing

C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials

C672/C672M Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals

C702 Practice for Reducing Samples of Aggregate to Testing Size

C778 Specification for Standard Sand

C882 Test Method for Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear

¹ This specification is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.43 on Packaged Dry Combined Materials.

Current edition approved Dec. 1, 2009. Published January 2010. Originally approved in 1980. Last previous edition approved in 2008 as C928/C928M - 08. DOI: 10.1520/C0928_C0928M-09.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org, For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.



C1012 Test Method for Length Change of Hydraulic-Cement Mortars Exposed to a Sulfate Solution E96/E96M Test Methods for Water Vapor Transmission of Materials

#### 3. Materials and Manufacture

3.1 Three types of packaged, dry, rapid-hardening concrete and three types of packaged, dry, rapid-hardening mortar are identified in Table 1.

TABLE 1 Performance Requirements

	3 h	1 day	7 days	28 days
Compressive Strength, min, MPa [ps]]				
R1 concrete or mortar	3.5 [500]	14 (2000)	28 [4000]	8
R2 concrete or mortar	7.0 [1000]			
R3 concrete or mortar	21 [3000]	35 [5000]	35 [5000]	B
Bond strength, min, MPa [psi]				
R1, R2 and R3 concrete or mortar	-	7 [1000]	10 [1500]	
Length change, based on length at 3 h, max, %				
R1, R2, and R3 concrete	allowable in	icrease afte	r 28 days	+0.15
or mortar	in water			
	allowable d	ecrease aft	er 28 days	-0.15
Consistency of concrete or mortar ^C			concrete slump, min, mm fin.]	Flow of mortar, min, %
R1 consistency after 15 min after addition of mixing liquid			75 [3]	100
R2 and R3 consistency at 5 min after addition of mixing liquid			75 [3]	100
Scaling resistance to delcing chemicals after 25 cycles of freezing and thawing	İ			
Concrete, max visual rating			2.5	
Mortar, max scaled material ^D			5 kg/m² [1	lb/ft ² ]

At its recognized that other characteristics of rapid-hardening concrete repair materials might need consideration. Such characteristics might be necessary in some environments and applications; however, to impose specification limits on all products is considered beyond the scope of this specification. Optional considerations with suggested methods of test may include tests for the following:

Time of setting Flexural strength Test Method C409/C409M Test Method C78

Freeze thaw

Test Method C666/C666M, Procedure A

Sulfate expansion Test Method C1012

^B The strength at 28 days shall be not less than the strength at 7 days.
Slump or flow requirements are waived for materials intended for vertical or vertical or vertical applications.

overhead applications.

^DA 250-mm [10-in.] square spalled to an average depth of 3 mm [1/s in.] for 100 % of its surface would have about 10 kg/m² [2.0 lb/ft²] of scaled material.

#### 4. Chemical Composition

4.1 If the material contains soluble chlorides or other ingredients in sufficient quantity to cause corrosion to steel reinforcement, the package markings shall contain the following statement in letter size no smaller than the directions for use:

This material is not recommended for use in a moist environment in contact with steel reinforcement.

- 4.1.1 Consider a total chloride ion content (Berman, 1972)^{3,4} in the packaged repair material greater than 600 g/m³ [1 lb/yd³] of the hardened repair material indicative that the packaged material contains sufficient chlorides to cause corrosion to steel reinforcement when the concrete is exposed to weather, is on the ground, or is in an otherwise moist environment. A much lower chloride ion content is suggested for use in prestressed concrete. Guidance for such users is outside the scope of this specification.
- 4.2 If the material contains metallic iron in excess of 1 % by weight, the package markings shall contain the following statement in letter size no smaller than the directions for use:

If small or scattered spots of iron-staining are considered objectionable, do not use this material where it will be exposed.

#### 5. Performance Requirements

5.1 The materials shall comply with the performance requirements in Table 1 for the applicable type.

#### 6. Sampling

- 6.1 A lot is the quantity of packaged repair material normally placed on a pallet. In general, this quantity will weigh from 900 to 1800 kg [2000 to 4000 lb].
- 6.2 A unit sample is a single package of material randomly selected from the lot.

#### 7. Specimen Preparation

- 7.1 Concrete—Mechanically mix the packaged dry concrete material with mixing liquid. Determine the properties of the unhardened mixture, and mold and cure the specimens in accordance with Practice C192/C192M or modifications as outlined herein.
- 7.1.1 The sample of packaged dry material shall be any combination of whole packages yielding not less than 20 L [3/3 ft²] of hardened material.
- 7.1.2 Base the quantity of water, other liquid component, or both added to the sample on the quantity per bag stated in the directions for use.
- 7.1.3 Place the sample in the mixing machine and add the required amount of liquid. Start mixing immediately. Continue mixing for the length of time indicated in the directions for use.
- 7.1.4 When making the slump test in accordance with Test Method C143/C143M, schedule work so the test will be completed in  $5 \pm \frac{1}{2}$  min after the mixing liquid is added to the R2 or R3 materials or  $15 \pm \frac{1}{2}$  min after mixing the liquid with the R1 materials.
- 7.1.5 Mold the required number of specimens using additional samples as may be necessary, mixed in accordance with

³ Berman, H. A., Determination of Chloride in Hardened Portland Cement Paste, Mortar, and Concrete, ASTM Journal of Materials, Vol. 7, No. 3, pp. 330-335, 1972

⁴ Clear, K. C., and Harrigan, E. T., "Sampling and Testing for Chloride Ion in Concrete," Report No. FHWA-RD77-85, Federal Highway Administration, Washington, DC, August 1977 (Available as PB 275-428/AS National Technical Information Services).

Nore 1—Where the nominal maximum particle size is not greater than 25 mm [1 in.], the use of cylindrical molds 100 mm [4 in.] in diameter by 200 mm [8 in.] in length is suggested.

- 7.2 Mortar—Mechanically mix packaged dry mortar material with mixing liquid. Determine the properties of the unhardened mixture, and mold and cure the specimens in accordance with Test Method C109/C109M or modifications as outlined herein.
- 7.2.1 The sample of packaged dry material shall weigh 3000  $\pm$  3 g [6.6  $\pm$  0.005 lb] and shall be representatively obtained from a whole package in accordance with Practice C702.
- 7.2.2 Base the quantity of water, or other liquid component, or both added during mixing on the quantity per unit of weight stated in the directions for use.
- 7.2.3 When making the flow test in accordance with the section on consistency in Test Method C109/C109M, schedule work so the test will be completed in  $5 \pm \frac{1}{2}$  min after the start of mixing liquid with the R2 or R3 materials or  $15 \pm \frac{1}{2}$  min after mixing the liquid with the R1 materials.
- 7.2.4 Mold the required number of specimens using additional samples as necessary mixed in accordance with 7.2.1-7.2.3. Do not use the mixtures for molding test specimens when the flow is less than that specified in Table 1.
- 7.3 In those cases where the manufacturer has indicated in the package markings, or elsewhere, that the packaged repair material can be mixed and applied at temperatures that lie beyond the range of  $20 \pm 8$  °C [70  $\pm 15$  °F], the product must meet the requirements of Table 1. Specimens must be made and cured in accordance with the procedures of this section. The mixing, molding and curing temperatures during the first 3 h after molding shall be within  $\pm 1$  °C [ $\pm 2$  °F] of the extreme temperature(s) stated by the manufacturer in the package markings.

#### 8. Test Methods

- 8.1 Manifestly Faulty Specimens—Treat manifestly faulty specimens in accordance with the corresponding section in Specification C494/C494M.
- 8.2 Compressive Strength—Prepare and test three test specimens for each age of test and each level of mixing temperature. Test in accordance with Test Method C39/C39M for concrete and Test Method C109/C109M for mortar.
- 8.3 Length Change—Prepare and test specimens in accordance with Test Method C157/C157M, except as modified by this section and 7.3. Use 25 mm [1-in.] prism for mortar material and 75 mm [3-in.] prism for concrete material.
- 8.3.1 Remove specimens from the molds at an age of 2½ to 2¾ h after the addition of mixing liquid to the dry cementitious mixture during the mixing operation.
- 8.3.2 Make the initial observation of length at 3 to  $3\frac{1}{4}$  h after the addition of mixing liquid to the dry cementitious mixture during the mixing operation. When specimens are cured at temperatures other than  $23 \pm 2$  °C [ $73.4 \pm 3$  °F], then both initial and final length observations must be made with the bars conditioned to  $\pm 2$  °C [ $\pm 3$  °F] of initial temperatures.

- 8.3.3 Immediately store one set of specimens as for "Air Storage" and one set as for "Water Storage" except that the water-stored specimens shall be stored in untreated tap water with no more than one set of specimens per container.
- 8.3.4 Take observations of length at age 28 days  $\pm 20$  h. Determine the average percent change in length when stored in water, and the average change in length of specimens stored in air.
- 8.4 Scaling Resistance—Make and cure the test specimens in accordance with Test Method C672/C672M, except as provided herein. For specimens of mortar omit the visual rating procedure after every 5 cycles and after 25 cycles determine the amount of scaling as the oven dry  $110 \pm 5$  °C [230  $\pm$  9 °F] mass per unit area of exposed test area.
- 8.5 Slant Shear Bond Strength—Prepare six complete test specimens in accordance with Test Method C882 for Type II and V systems except as modified by this section.
- 8.5.1 Do not apply a bonding system to prepared surface unless a bonding system is required by the manufacturer of the rapid-hardening cementitious material. Fill the top half of the cylinder with the rapid-hardening cementitious material instead of the portland cement mortar specified.
- 8.5.2 Test three specimens in compression at 1 day and three at 7 days. Calculate the bond strength on the elliptical area and report the failure type.

#### 9. Report

- 9.1 Report the following:
- 9.1.1 Source and identification, including type, of material tested,
- 9.1.2 Details of any variations and options practiced by the tester that are recommended or allowed by the manufacturer or others.
- 9.1.3 Compressive strength of material at 3 h, 1 day, 7 days and 28 days,
  - 9.1.4 Bond strength at 1 day and 7 days,
  - 9.1.5 Percent length change at 28 days in water and in air,
  - 9.1.6 Percent flow in mortar at 5 or 15 min,
  - 9.1.7 Slump in concrete at 5 or 15 min, and
  - 9.1.8 Scaling resistance after 25 cycles.

#### 10. Precision and Bias

#### 10.1 Length Change:

10.1.1 Precision—The precision of the length change test method described in section 8.3 is based on an interlaboratory study that was conducted in 2007.⁵ Seven laboratories tested one rapid-hardening material that consisted of commercially available rapid hardening cement blended with three parts standard graded sand complying with Specification C778. The precision values were calculated for both "water storage" and "air storage" of test specimens. A test result is defined in this specification as the average of three separate measurements (triplicate lengthchange specimens).

Supporting data have been filed at ASTM International Headquarters and may be obtained by requesting Research Report RR: C09-1035.

## 4∰ C928/C928M - 09

- 10.1.2 The single-operator standard deviation for water storage of test specimens has been found to be 0.0031 %.⁶ Therefore, results of two properly conducted tests by the same operator on the same material are not expected to differ by more than 0.009 %.⁶ The single-operator standard deviation for air storage of test specimens has been found to be 0.0067 %.⁶ Therefore, results of two properly conducted tests by the same operator on the same material are not expected to differ by more than 0.019 %.⁶
- 10.1.3 The multi-laboratory standard deviation for water storage of test specimens has been found to be 0.0078 %.⁶ Therefore, results of two properly conducted tests from two different laboratories on the same material are not expected to differ by more than 0.022 %.⁶ The multilaboratory standard deviation for air storage of test specimens has been found to be 0.015 %.⁶ Therefore, results of two properly conducted tests from two different laboratories on the same material are not expected to differ by more than 0.041 %.⁶
- 10.1.4 Bias—Since there is no accepted reference material suitable for determining any bias that might be associated with this test method, no statement on bias is being made.

#### 11. Rejection

11.1 The purchaser has the right to reject material that fails to conform to the requirements of this specification. Rejection shall be reported to the producer or supplier promptly and in writing.

#### 12. Certification

12.1 When specified in the purchase order or contract, a producer, supplier, or an independent testing laboratory shall furnish certification to the purchaser that the material has been tested in accordance with this specification and found to meet the requirements. When specified in the purchase order or

⁶These measurements represent, respectively, the (1s) and (d2s) limits in accordance with Practice C670.

contract, a report of test results on samples taken from material shipped shall be furnished.

#### 13. Product Marking

- 13.1 Mark all packages to contain the following information:
  - 13.1.1 Specification designation.
  - 13.1.2 R1 or R2 or R3 type.
- 13.1.3 Directions for use that shall include but are not limited to:
- 13.1.3.1 When a bonding agent is used in the test of bond strength, the type and kind of adhesive recommended to bond fresh repair material to the concrete or mortar being repaired.
- 13.1.3.2 The recommended amount of water, other liquid component, or both, to be mixed with the package contents.
- 13.1.3.3 The recommended length of mixing time or sequence of mixing and resting times in minutes.
  - 13.1.4 Date the material was packaged.
- 13.1.5 The yield in litres [cubic feet] or yield in square metres per centimetre [square feet per inch] thickness when mixed with the recommended amount of liquid.
- 13.1.6 The net weight in each container. The contents of any container shall not vary by more than 2% from the weight stated in the markings. The average weight of filled containers in a lot shall be not less than the weight stated in the markings.
- 13.1.7 If the product is formulated for use in vertical or overhead applications, it shall be so stated on the package.

#### 14. Packaging

14.1 The material from which the containers are made shall have water vapor transmission not greater than 100 g/m² [0.2 lb/ft³] in 24 h as determined in accordance with Procedure B of Test Methods E96/E96M.

#### 15. Keywords

15.1 cementitious mortar or concrete materials for repair; concrete; packaged; mortar; packaged; packaged dry materials for concrete repair; rapid hardening materials; repair materials

#### SUMMARY OF CHANGES

Committee C09 has identified the location of selected changes to this specification since the last issue, C928/C928M - 08, that may impact the use of this specification. (Approved December 1, 2009)

(1) Added new Section 10 Precision and Bias and renumbered subsequent sections and footnotes.

Committee C09 has identified the location of selected changes to this specification since the last issue, C928 - 05, that may impact the use of this specification. (Approved October 1, 2008)

(1) Revised the standard as a combined units standard.

## **∰** C928/C928M − 09

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## COST SHEET

RFQ #: 0311C209

ltem#	<b>Est Quantity</b>	Description*	Unit Cost	Amount
1	756	Euco-Speed - or Equal * BASE 10-60 RAPID MOEDIC Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs - Bags	书12.58	<b>\$9510.48</b>
,	, 60	* "Or Equal" merchandise-vendor must provide complete manufacturer's literature demonstrating adherence to the mandatory requirements contained herein.  The estimated quantity is for evaluation purposes only		
		The commuted quantity to to ovariation purposes only		
		TOTAL	\$ 9,51	0.48



PRODUCT DATA

3 03 01 00

Maintenance of Concrete

## 10-60 RAPID MORTAR

Very rapid-setting cement-based mortar

#### Description

10-60 Rapid Mortar is a onecomponent shrinkage-compensated very rapid-setting cement-based mortar. It is designed for horizontal concrete surfaces where high early strength gain is required.

#### Yield

0.43 ft³ (0.012 m³) per 50 lb (22.7 kg) bag

When extended 50%: 0.57 ft³ (0.016 m³)

When extended 100%: 0.77 ft³ (0.022 m³)

#### **Packaging**

50 ib (22.7 kg) bags 3,000 ib (1,360.8 kg) bulk bags

#### **Shelf Life**

1 year when properly stored

#### Storage

Store and transport in unopened containers at 60 to 80° F (16 to 27° C) in clean, dry conditions.

#### **Features**

- · Extra low permeability
- · Very rapid setting
- · Excellent resistance to freeze/thaw cycling
- · Nongypsum based
- Shrinkage compensated
- Can be extended up to 100% by weight with 3/8" (10 mm) aggregate
- Proprietary cement blend

#### **Benefits**

Helps prevent chloride intrusion

Structures can be opened to vehicular traffic in 1 hour; epoxy coated in as little as 4 hours

Outstanding durability

Volume stability

Minimizes cracking from drying shrinkage; reduces stress at the bond line

Economical; high yields

Bonds to carbonated and noncarbonated concrete substrates

#### Where to Use

APPLICATION

- · Applications requiring high early-strength gain
- · Structural concrete repairs
- · Repairing industrial floors
- Bridges
- · Parking decks
- Airport runways

#### LOCATION

- Horizontal surfaces
- Interior or exterior

#### SUBSTRATE

Concrete

#### How to Apply Surface Preparation

CONCRETE

- 1. Concrete must be structurally sound and fully cured (28 days).
- 2. Saw cut the perimeter of the area being patched into a square with a minimum depth of 1/2" (13 mm).
- 3. Remove all unsound concrete and roughen the surface to a minimum 1/4" (6 mm) profile amplitude.
- Remove all laitance, oil, grease, curing compounds, and other contaminants that could prevent adequate bond.
- The concrete substrate should be saturated surface-dry (SSD), without standing water, before application.



#### **Technical Data**

#### Composition

10-60 Rapid Mortar is a blend of cement, graded aggregate, shrinkage-compensating agents, and set-control additives.

#### Compliances

• ASTM C 928

#### **Test Data**

The following results were obtained with a water / powder ratio of 5.5 pints (2.6 L) of water to 50 lbs (22.7 kg) of 10-60 Rapid Mortar at  $73^{\circ}$  F (23 $^{\circ}$  C).

Fresh wet density, lb/ft³ (kg/m³)	130 (2,082)	ASTM C 138
Set time, min, at 72° F (22° C)	L.L. William	ASTM C 191
Initial	16	
Final	28	
Working time, min	8	
Length change, % (pstrain)		ASTM C 928
Drying shrinkage	-0.05 (-500)	
Wetting expansion	+0.03 (+300)	
Coefficient of thermal expansion, in/in/° F (cm/cm/° C)	7.0 x 10 ⁻⁶ (12.6 x 10 ⁻⁶ )	CRD C 39
Modulus of elasticity, psi (GPa)	4.4 x 10 ⁶ (19.5)	ASTM C 469
Rapid chloride permeability, coulombs	< 300	ASTM C 1202
Freeze/thaw resistance, % RDM, at 300 cycles	100	ASTM C 666, (Procedure A)
Scaling resistance, at 25 cycles	0 rating; no scaling	ASTM C 672
Slant shear bond strength, psi (MPa)		ASTM C 882, modified
1 day	2,300 (16)	
28 days	2,600 (18)	
Splitting tensile strength, psi (MPa)		ASTM C 496
1 day	400 (3)	
28 days	450 (3)	
Flexural strength, psi (MPa)		ASTM C 348
1 day	700 (5)	
28 days	850 (6)	
Compressive strength, psi (MPa), 2" cubes		ASTM C 109
1 hr	2,000 (14)	
2 hrs	3,000 (21)	
1 day	6,500 (45)	
28 days	8,000 (55)	
Compressive strength, psi (MPa), 3 by 6" cylinders, at 28 days	7,400 (51)	ASTM C 39

^{&#}x27;No bonding agent used; mortar scrubbed into substrate.

All application and performance values are typical for the material, but may vary with test methods, conditions, and configurations.

#### REINFORCING STEEL

- Remove all oxidation and scale from the exposed reinforcing steel in accordance with ICRI Technical Guideline No. 03730 "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion."
- For additional protection from future corrosion, coat the prepared reinforcing steel with Zincrich Rebar Primer.

#### MIXING

- Add 5-1/2 pints (2.6 L) of clean water to the mixing container for each bag of 10-60 Rapid Mortar. If required, add the correct amount of aggregate to the mixer. Add the powder to the water while continuously mixing with a slow-speed drill and paddle, mortar mixer, or other forced action mixer.
- 2. Mix for a minimum of 3 minutes until fully homogeneous.

#### AGGREGATE EXTENSION

- 1. For repair areas 2-4" (51 102 mm) in depth, the minimum recommended addition is 15 25 lbs (6.8 11.4 kg) of 3/8" (10 mm) washed, graded, rounded, SSD, low-absorption, high-density aggregate per 50 lb (22.7 kg) bag.
- 2. For areas greater than 4" (102 mm) in depth, the minimum recommended addition is 25 50 lbs (11.4 to 22.7 kg) of 3/8" (10 mm) washed, graded, rounded, SSD, low-absorption, high-density aggregate per 50 lb bag.
- 3. The maximum aggregate extension is 50 lbs (22.7 kg) of pea gravel per bag.
- The performance of 10-60 Rapid Mortar depends on the type, condition, and amount of aggregate added. Rely on trials, testing, and previous experience to determine aggregate suitability.

#### Application

- Apply the mixed material onto the prepared saturated surface-dry (SSD) substrate by gloved hand, trowel, or screed. Ensure proper consolidation of the mortar and compaction around reinforcing steel. Minimum application thickness is 1/2" (13 mm).
- 2. Finish the completed repair, as required, taking care not to overwork the surface.
- 3. A maximum of 15 minutes should be allowed to mix, place, and finish 10-60 Rapid Mortar at 70° F (21° C).

#### Clean Up

Clean tools and equipment with clean water immediately after use. Cured material must be removed mechanically.

#### Curing

 Proper curing is extremely important. Cure 10-60 Rapid Mortar immediately after finishing.
 Use a water-based curing compound that complies with ASTM C 309.

#### For Best Performance

- Minimum ambient, surface, and material temperature is 40° F (4° C) and rising.
- Do not mix longer than 5 minutes.
- Minimum application thickness is 1/2" (13 mm).
- Consult coating supplier for overcoating requirements.
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

#### Health and Safety

10-60 RAPID MORTAR

#### WARNING!

10-60 Rapid Mortar contains silica, crystalline quartz; alumina cement; portland cement; anhydrite; fly ash; calcium sulfate; silica, amorphous; Iron oxide.

#### Risks

Product is alkaline on contact with water and may cause injury to skin or eyes. Ingestion or inhalation of dust may cause irritation. Contains small amount of free respirable quartz which has been listed as a suspected human carcinogen by NTP and IARC. Repeated or prolonged overexposure to free respirable quartz may cause silicosis or other serious and delayed lung injury.

#### Precautions

Avoid contact with skin, eyes and clothing. Prevent inhalation of dust. Wash thoroughly after handling. Keep container closed when not in use. DO NOT take internally. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

#### First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

#### **Proposition 65**

This product contains material listed by the State of California as known to cause cancer, birth defects or other reproductive harm.

#### **VOC Content**

0 g/L or 0 lbs/gal less water and exempt solvents.

For medical emergencies only, call ChemTrec (1-800-424-9300).

#### BASF Construction Chemicals, LLC -**Building Systems**

889 Valley Park Drive Shakopee, MN, 55379

www.BuildingSystems.BASF.com

Customer Service 800-433-9517 Technical Service 800-243-6739



EMBED WARRANTY NOTICE. Every reasonable effort is made to apply BASF exacting standards both in the manufacture of our products and in the information which we issue concerning these products and their use. We warrant our products to be of good quality and with replace or, at our election, refund the purchase price of any products proved defeative. Statisticating results depend not only upon quality products, but also upon many feators beyond our control. Therefore, except for such replacement or refund, BASF MARKES NO WARRANTED OF GUEVANIEE, EXPRESS OF INPLIED, BROUDINGS WARRANTES OF FIRMESS FOR A PARTICULAR PURPOSE AND PROPOSE OF INPLIED, BROUDINGS WARRANTES OF FIRMESS FOR A PARTICULAR PURPOSE AND PROPOSE OF INPLIED, BROUDINGS WARRANTES OF FIRMESS FOR A PARTICULAR PURPOSE. ON A PARTICULAR PURPOSE AND PROPOSE OF INPLIED, BROUDINGS WARRANTES OF FIRMESS FOR A PARTICULAR PURPOSE. AND PROPOSE OF INPLIED, BROUDINGS WARRANTES OF FIRMESS FOR A PARTICULAR PURPOSE.

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Rev. 09/08

## State of West Virginia

## VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with **West Virginia Code**, §5A-3-37. (Does not apply to construction contracts). **West Virginia Code**, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the **West Virginia Code**. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

1.	Application is made for 2.5% resident vendor preference for the reason checked: Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2. -L	Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3.	Application is made for 2.5% resident vendor preference for the reason checked:  Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid, or,
4.	Application is made for 5% resident vendor preference for the reason checked: Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5.	Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6.	Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.
require agains or ded	understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the ements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty t such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency ucted from any unpaid balance on the contract or purchase order.
authori the red deeme	mission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and izes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid juired business taxes, provided that such information does not contain the amounts of taxes paid nor any other information and by the Tax Commissioner to be confidential.
and ac	penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true ccurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate les during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.
Bidde	4/5/11 Title: REGIONAL MANAGER.
Date:_	4/5/11 Title: REGIONAL MANAGER.

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RFQ No.	

Purchasing Affidavit (Revised 12/15/09)

#### STATE OF WEST VIRGINIA Purchasing Division

## **PURCHASING AFFIDAVIT**

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owned is an amount greater than one thousand dollars in the aggregate

#### **DEFINITIONS:**

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, Limited Liability Company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

**EXCEPTION:** The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (West Virginia Code §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

# WITNESS THE FOLLOWING SIGNATURE Vendor's Name: Forn Tech Concare Forn, Inc. Authorized Signature: Man, I Date: 4/4/11 State of WV County of Kanawha, to-wit: Taken, subscribed, and sworn to before me this 4 day of April 201. My Commission expires March 29 7011, 20. AFFIX SEAL HERE NOTORY PUBLIC Official Seal Notary Public, State of West Virginia

JULIA R. LARCK Statewide Service 603 Main Avenue Nitro, WV 25143

My Commission Exp. March 29, 2017



HODKEY

State of West Virginia Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

# Request for Quotation

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PAGE 1

ADDRESS:CORRESPONDENCE TO ATTENTION OF

BUYER 33

304-558-2402

RFQ COPY
TYPE NAME/ADDRESS HERE

FORM TECH CONCRETE FORMS, INC. 28 WINFIECD Rd. SAINT ALBANS, WV 25177 DIVISION OF HIGHWAYS DISTRICT THREE

624 DEPOT ST PARKERSBURG, WV 26101

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