ADDENDUM NO. 2
2025 STORMWATER STRUCTURE MAINTENCNACE
TYRONE, GEORGIA
January 22, 2026

The following changes, modifications, and/or clarifications to the project documents are a part, thereof, and change the original documents only in the manner and to the extent stated.

1. Bidders are reminded to comply with all the requirements for bidding as enumerated in the Project Manual, INCLUDING ACKNOWLEDGEMENT OF THE RECEIPT OF THIS ADDENDUM ON THE BID FORM.

2. Reference is made to the following question: Would the Town of Tyrone consider an approved equal for the cementitious grout material? The answer is: Yes, the Town will consider approved equals.

3. In the Project Manual, Remove Section 01026, “Unit Prices”, and replace with the attached Section 01026, “Unit Prices”.

4. The attached Manufacturer Specifications are hereby included as approved equals.

END OF ADDENDUM NO. 2

SECTION 01026

UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY:

A. This Section specifies administrative and procedural requirements for unit prices.

1. A unit price is an amount proposed by Bidders, as a price per unit of measurement for materials and/or services that will be added to or deducted from the Contract Sum by Change Order in the event the estimated quantities of Work required by the Contract Documents are increased or decreased, in accordance the General Conditions and/or other provisions of the Bid and Contract Documents.

2. Unit prices shall include all necessary material, labor, fees, layout, supervision (field and home office), general expenses, insurance, bonds, overhead, profit and applicable taxes, for unit item of work in place.

3. Refer to other Division 1 Sections and individual Specification Sections for construction activities requiring the establishment of unit prices. Methods of approval, verification, measurement and payment for unit prices are specified in those sections.

B. Related work specified elsewhere includes:

1. Section 03310 - “Concrete”
2. Section 32 1750 – “Concrete Curbs and Gutters”
3. Strong Seal QSR Specification
4. Strong Seal General Liner Specification
5. Quadex Hyperform Specification
6. Quadex QM1-S Specification
7. Quadex Aluminaliner Specification
8. Cemtec Hydraulic Cement Specification

C. Schedule:

1. A “Unit Price Schedule” is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials and methods described under each unit price.

2. The Owner reserves the right to reject the Contractor’s measurement of work-in-place that involves use of established unit prices, and to have this work measured by an independent surveyor acceptable to the Contractor at the Owner’s expense.

PART 2 - PRODUCTS

2.1 Not Applicable.

PART 3 - EXECUTION

3.1 ITEMIZED UNIT PRICE SCHEDULE:

1. **Structure ID. 13**
   a. Description: Grout around 1-18" storm pipe connection in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

   b. Unit of Measure: Each (EA) of structure maintenance.

2. **Structure ID. 14**
   a. Description: Grout around 2-18" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

   b. Unit of Measure: Each (EA) of structure maintenance.

3. **Structure ID. 37**
   a. Description: Grout around 2-24" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.
   b. Unit of Measure: Each (EA) of structure maintenance.

4. **Structure ID. 61**
   a. Description: Grout around 1-24" storm pipe connection in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.
   b. Unit of Measure: Each (EA) of structure maintenance.

5. **Structure ID. 62**
   a. Description: Grout around 2-24" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

   b. Unit of Measure: Each (EA) of structure maintenance.

6. **Structure ID. 140**
   a. Description: Grout around 1-30" storm pipe connection in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.
   b. Unit of Measure: Each (EA) of structure maintenance.

7. **Structure ID. 141**
   a. Description: Grout around 1-30" and 1-36" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer

specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

8. Structure ID. 189

a. Description: Grout and repair scour around 1-36" and 1-42" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove sediment in storm structure and pour concrete invert channel in accordance with GDOT Specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

9. Structure ID. 190

a. Description: Grout around 2-36" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Grout storm structure brick in accordance with Strong-Seal Strong Seal General Liner or Quadex QM1-S / Aluminaliner manufacturer specifications. Remove standing water and pour concrete invert channel in accordance with GDOT Specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

10. Structure ID. 361

a. Description: Grout around 1-36" storm pipe connection in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

11. Structure ID. 364

a. Description: Grout around 2-36" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Repair chipped corner of catch basin. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

12. Structure ID. 365

a. Description: Grout around 2-36" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

13. Structure ID: 449

a. Description: Grout around storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

14. Structure ID. 453

a. Description: Grout around 1-36", 1-54", and 1-60" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Grout brick junction box in accordance with Strong-Seal Strong Seal General Liner or Quadex QM1-S / Aluminaliner manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

15. Structure ID. 456

a. Description: Grout around 1-60", and 1-72" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Grout brick junction box in accordance with Strong-Seal Strong Seal General Liner or Quadex QM1-S / Aluminaliner manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

16. Structure ID. 488

a. Description: Grout structure cracks and around 2-18" pipes in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

17. Structure ID. 489

a. Description: Grout around 2-18" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.
b. Unit of Measure: Each (EA) of structure maintenance.

18. Structure ID. 490

a. Description: Grout around 2-42" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

19. Structure ID. 491

a. Description: Grout around 2-42" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

20. Structure ID. 492

a. Description: Grout around 1-18" storm pipe connection in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove standing water and pour concrete invert channel in accordance with GDOT Specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

21. Structure ID. 495

a. Description: Grout storm structure in accordance with Strong-Seal Strong Seal General Liner or Quadex QM1-S / Aluminaliner manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

22. Structure ID: 496

a. Description: Grout storm structure in accordance with Strong-Seal Strong Seal General Liner or Quadex QM1-S / Aluminaliner manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

23. Structure ID. 497

a. Description: Grout around 1-18" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

24. Structure ID. 507

a. Description: Grout around 1-30" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove standing water and pour concrete invert channel in accordance with GDOT Specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

25. Structure ID. 508

a. Description: Grout around 1-30" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove standing water and pour concrete invert channel in accordance with GDOT Specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

26. Structure ID. 511

a. Description: Grout around 1-18" storm pipe connection in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove debris and pour concrete invert channel in accordance with GDOT Specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

27. Structure ID. 607

a. Description: Remove HDPE underdrain pipe back to storm structure and install 8" Class B Concrete Cap per GDOT Specifications and Standard Detail 9031L. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

28. Structure ID. 608

a. Description: Remove HDPE underdrain pipe back to storm structure and install 8" Class B Concrete Cap per GDOT Specifications and Standard Detail 9031L.. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

29. Structure ID. 611

a. Description: Remove underdrain pipe back to storm structure and install 8" Class B Concrete Cap per GDOT Specifications and Standard Detail 9031L. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

30. Structure ID. 612

a. Description: Remove underdrain pipe back to storm structure and install 8" Class B Concrete Cap per GDOT Specifications and Standard Detail 9031L. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

31. Structure ID. 615

a. Description: Grout around 2-36" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

32. Structure ID. 616

a. Description: Grout around 1-36" and 1-42" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer

specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

33. Structure ID. 640

a. Description: Grout exposed brick in storm structure in accordance with Strong-Seal Strong Seal General Liner or Quadex QM1-S / Aluminaliner manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

34. Structure ID. 648

a. Description: Grout brick area of junction box around inlet pipe from private development in accordance with Strong-Seal Strong Seal General Liner or Quadex QM1-S / Aluminaliner manufacturer specifications. Remove standing water and pour concrete invert channel in accordance with GDOT Specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

35. Structure ID. 702

a. Description: Grout around 1-18" storm pipe connection in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove trash and pine straw from structure. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

36. Structure ID. 716

a. Description: Grout around 2-48" storm pipe connections and storm structure joints in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove underdrain pipe back to storm structure and install 8" Class B Concrete Cap per GDOT Specifications and Standard Detail 9031L. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

37. Structure ID. 717

a. Description: Grout around 2-48" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove underdrain pipe back to storm structure and install 8" Class B Concrete Cap per GDOT Specifications and Standard Detail 9031L. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

38. Structure ID. 1008

a. Description: Grout around 1-24" and 1-30" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

39. Structure ID. 1013

a. Description: Grout interior top of structure in accordance with Strong-Seal Strong Seal General Liner or Quadex QM1-S / Aluminaliner manufacturer specifications. Remove trash and pine straw from structure. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

40. Structure ID. 1178

a. Description: Grout around 1-18" and 1-24" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Grout brick section of storm structure in accordance with Strong-Seal Strong Seal General Liner or Quadex QM1-S / Aluminaliner manufacturer specifications. Remove debris and pour concrete invert channel in accordance with GDOT Specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

41. Structure ID. 1232

a. Description: Grout storm structure at joints to address seepage in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

42. Structure ID. 1233

a. Description: Grout junction box joints in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

43. Structure ID. 1247

a. Description: Grout junction box joints and 2-42" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove debris and pour concrete invert channel in accordance with GDOT Specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

44. Structure ID. 1347

a. Description: Grout catch basin under lid in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

45. Structure ID. 1374

a. Description: Grout 2-30" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

46. Structure ID. 1375

a. Description: Grout 2-30" storm pipe connections and crack in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

47. Structure ID. 1399

a. Description: Grout around 1-24" and 2-48" storm pipe connections in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove debris and pour concrete invert channel in accordance with GDOT Specifications. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

48. Structure ID. 1431

a. Description: Grout catch basin joints and cracks in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove underdrain pipe back to storm structure and install 8" Class B Concrete Cap per GDOT Specifications and Standard Detail 9031L. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

49. Structure ID. 1432

a. Description: Grout catch basin joints and cracks in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove underdrain pipe back to storm structure and install 8" Class B Concrete Cap per GDOT Specifications and Standard Detail 9031L. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

50. Structure ID. 1485

a. Description: Grout catch basin joints and cracks in accordance with Strong-Seal QSR, Quadex Hyperform or Cemtec Hydraulic Cement manufacturer specifications. Remove HDPE underdrain pipe back to storm structure and install 8" Class B Concrete Cap per GDOT Specifications and Standard Detail 9031L. Payment for this item includes mobilization, traffic control, temporary erosion and sediment control, site work, clean up and all related work.

b. Unit of Measure: Each (EA) of structure maintenance.

END OF UNIT PRICES

SAFETY DATA SHEET

Hyperform® BY VORTEX

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	• Hyperform®
Trade Name	• Hyperform®
Company	• Quadex LLC, 564 W. 9320 S., Sandy, UT 84070
Company Contact	• Matthew Peterson
Company Phone	• 844-782-4832
Emergency	• Domestic Shipments and to Canada: 1-800-633-8253 • International Shipments: 1-801-629-0667

2. HAZARDS IDENTIFICATION

Emergency Overview: OSHA Hazards	• This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).	
GHS Classification		
	Skin Corrosion/Irritation	• Category 1
	Serious Eye Damage/Eye Irritation	• Category 1
	Skin Sensitization	• Category 1
	Carcinogenicity/Inhalation	• Category 1A
	Specific Target Organ Toxicity: Single Exposure (Respiratory Tract Irritation)	• Category 3
GHS Label elements, including precautionary statements	*Pictogram* 	
Signal Word	• Danger	
Hazard Statement(s)	• Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. May cause cancer.	
Precautionary Statement(s)		
Prevention	• Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Use outdoors in a well ventilated area. Wash any exposed body parts thouroughly after handling. Wear protective gloves/protective clothing/ eye protection/face protection.Contaminated clothing must not be allowed out of the workplace.	

2. HAZARDS IDENTIFICATION (CONTINUED)

Response	• If exposed or concerned: Immediately get medical advice/attention if you feel unwell or irritation or rash occurs.If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.If inhaled: Remove person to fresh air and keep comfortable for breathing. If swallowed: Rinse mouth. Do not induce vomiting.
Storage	• Restrict or control access to stockpile areas (store locked up). Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains cement without an effective procedure for assuring safety. Store in a well ventilated area. Keep container tightly closed.
Disposal	• Dispose of contents/container in accordance with local/regional/national/international regulations.
HNOC	• None known.
Supplemental Information	• Dispose of contents/container in accordance with local/regional/national/international regulations.

Overexposure to portland cement can cause serious, potentially irreversible skin or eye damage in the form of chemical (caustic) burns, including third degree burns. The same serious injury can occur if wet or moist skin has prolonged contact exposure to dry portland cement.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Cas #	Percent
Portland Cement	• 65997-15-1	• 40-100
Admixtures		• 1-15
Monocrystalline Quartz	• 14808-60-7	• 40-70

4. FIRST AID MEASURE

First aid procedures	
Eye Contact	• Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do so. Seek medical attention immediately.
Skin Contact	• Wash off with plenty of soap and water. Get medical attention if irritation develops and persists.
Inhalation	• If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Ingestion	• Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. If ingestion of a large amount does occur, call a poison control center immediately.
Notes to Physician	• Symptoms may be delayed.
General Advice	• Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. FIRE FIGHTING MEASURES

Flammable Properties	• The product is not flammable. No unusual fire or explosion hazards noted.
Extinguishing Media	• Dry chemical, CO_2, or water spray. Alcohol foam.
Suitable Extinguishing Media	• Dry chemical, CO_2, or water spray. Alcohol foam. In the event of fire, use water spray to cool unopened containers. Cool containers exposed to flames with water until well after the fire is out. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Specific Methods	• None available.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	• Keep unnecessary personnel away. Keep upwind.
Environmental Precautions	• Do not flush into surface water or sanitary sewer system.
Methods for Containment	• Stop the flow of material, if this is without risk. Dike the spilled material.
Methods for Cleaning Up	• Shovel into labled waste container for reuse or disposal. Wear adequate protective equipment. Area may be washed down with water.

7. HANDLING AND STORAGE

Handling	• Do not get this material in contact with eyes. Avoid contact with skin. Do not empty into drains.
Storage	• Store in dry place and keep sealed until ready to use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits: US. ACGIH Threshold Limit Values			
Components	• Type	• Value	• Form
Portland Cement	• TWA	• 10 mg/m³	
Admixtures	• TWA	• 10 mg/m³	
Occupational Exposure Limits: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)	• N/A	**Occupational Exposure Limits: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**	• N/A
Occupational Exposure Limits: US. OSHA Table Z-3 (29 CFR 1910.1000)	• N/A	**Occupational Exposure Limits: US. OSHA Table Z-3 (29 CFR 1910.1000)**	• N/A

8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

Engineering Controls	• Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Eye / Face Protection	• Do not get in eyes. Chemical goggles are recommended.
Skin Protection	• Avoid contact with the skin. Wear protective gloves. Wear suitable protective clothing as protection against splashing or contamination.
Respiratory Protection	• When workers are facing concentrations above the exposure limit they must use NIOSH/MESHA respirators.
General Hygiene Considerations	• Do not get in eyes. Avoid contact with skin.

9. PHYSICAL & CHEMICAL PROPERTIES

Appearance	• Not available.
Physical State	• Powder
Form Viscous	• Powder
Color	• Grey
Odor	• Odorless
Odor Threshold	• Not available.
pH	• Not available.
Vapor Pressure	• Not available.
Vapor Density	• Not available.
Boiling Point	• Not available.
Melting Point/ Freezing Point	• Not available.
Solubility (Water)	• Slight (0.01 – 1.0%)
Specific Gravity	• 3.15
Relative Density	• Not available.
Flash Point	• Not available.
Flammability limits in air upper, % by volume	• Not available.
Flammability limits in air lower, % by volume	• Not available.
Auto-Ignition Temperature	
Other Data	

10. CHEMICAL STABILITY & REACTIVITY INFORMATION

Chemical Stability	• Stable under normal conditions.
Conditions to Avoid	• Although no hazardous reactions will occur, product should be kept dry.
Incompatible Materials	• Not available.
Hazardous Decomposition Products	• None

11. TOXICOLOGICAL INFORMATION

Toxicological Data	
Components	• Test Results / None
Local Effects	• Irritating to skin. Contact may irritate or burn eyes.
Chronic Effects	• Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Carcinogenicity	• None

12. ECOLOGICAL INFORMATION

Toxicological Data	
Components	• Test Results / Not available
Ecotoxicity	• Not available.
Environmental Effects	• An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Aquatic Toxicity	• No data available for this product.
Persistence and Degradability	• Not available.

13. DISPOSAL CONSIDERATIONS

Disposal Instructions	• Dispose in sanitary landfill in accordance with federal, state, and local regulations.
Waste from Residues / Unused Products	• Not applicable unused products.

14. TRANSPORT INFORMATION

DOT	• Not regulated as dangerous goods.

15. REGULATORY INFORMATION

US Federal Regulations	• This product is a non “Hazardous Chemical” as defined by theOSHA Hazard Communication Standard 29 CFR 1910.1200. CERCLA/SARA Hazardous Substances - Not applicable.
Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2)	• Not regulated.
DEA Essential Chemical Code Number	• Not regulated.
Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))	• Not regulated.
DEA Exempt Chemical Mixtures Code Number	• Not regulated.
CERCLA (Superfund) Reportable Qty	• None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories		
	Immediate Hazard	• No
	Delayed Hazard	• No
	Fire Hazard	• No
	Pressure Hazard	• No
	Reactivity Hazard	• No
Section 302 Extremely Hazardous Substance	• No	
Section 311 Hazardous Chemical	• No	

16. OTHER INFORMATION

Further Information	• HMIS® is a registered trade and service mark of the NPCA.	
HMIS® Ratings		
	Health	• 2
	Flammability	• 0
	Physical hazard	• 0
NFPA Ratings		
	Health	• 2
	Flammability	• 0
	Instability	• 0
Disclaimer	• The information provided in this Safety Data Sheet is correct to the best of our knowledge information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification, The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.	
Issue Date	• Not available.	
This Data Sheet Contains	• Product and Company Identification: Synonyms changes from the previous Physical & Chemical Properties: Multiple Properties version in section(s): Transport Information: Material Transportation Information Regulatory Information: United States.	

TECHNICAL DATA SHEET

Hyperform®

TYPICAL PERFORMANCE CHARACTERISTICS*

- **Compressive Strength (ASTM C39)**
  30 minutes >1,200 psi | 8.27 MPa
  1 hour >2,500 psi | 17.24 MPa
  1 day >4,000 psi | 27.58 MPa
  28 days >7,000 psi | 48.26 MPa
- **Bond Strength (ASTM C882)**
  28 day >3,000 psi | 20.68 MPa
- **Shrinkage (ASTM C596)**
  28 Days ≤ 0.02%

* The values stated in inch-pound units are to be regarded as the standard. The values given in International System are for information only.

FEATURES AND BENEFITS

- **Rapid-setting**
- **High early and ultimate strengths**
- **Non-Shrinking**
- **No Calcium Chloride**
- **Ready to use, just add water**
- **Excellent resistance to freeze thaw**

PRECAUTIONS

Avoid eye contact or prolonged contact with skin. Wash thoroughly after use. Persons using Hyperform should wear necessary eye protection, dust mask and rubber gloves.Read all product labels and technical literature.

WARRANTY

Quadex, LLC warrants its products to be free of defects in material and workmanship. Unless superseded by project specifications and terms agreed upon in writing between installer and Quadex prior to bid, if within one year from purchase, any Quadex, LLC product is proven defective, the company will replace said product or refund its purchase price at its sole discretion. The company's obligation shall be limited solely to such replacement or refund. There are no other warranties by Quadex, LLC, expressed or implied. There is no warranty if Quadex products are used contrary to Quadex, LLC's written directions.

QUADEX® A VORTEX COMPANY | REPAIR MATERIALS

Rapid Set High Early Strength Patching Material

DESCRIPTION

Hyperform® is a one component, rapid setting, high early strength patching material designed for repairing vertical and horizontal concrete and masonry structures.

RECOMMENDED FOR

- **Filling large voids in manhole walls**
- **Reconstructing inverts**
- **Concrete repair and patching**
- **Pipe repair**

PACKAGING

Hyperform is supplied in 60 lb. | 27.2 kg. poly-lined bags or 50 lb. | 22.68 kg. plastic pails.

YIELD

One 60 lb. | 27.2 kg. bag of Hyperform will yield approximately 0.48 cu. ft. | 0.013 cu. m. and will cover 11.5 sq. ft. | 1.07 sq. m. at a 0.5 in. | 12.7 mm thickness.

THICKNESS

When used as a preparation material, prior to the application of a liner product, Hyperform can be installed at a thickness of between 0.25 and 2.0" without sag on overhead, horizontal and vertical surfaces.

APPLICATION INFORMATION

Prepare surface to be patched by removing all loose concrete by using an air or electric hammer. Next, sandblast or water blast surface to clean away all contaminants, such as oil, chemicals, or dust. Then rinse with potable water to remove all remaining dirt, sand and loose debris.

Mix Hyperform with clean potable water at a rate of 1.0 gallon | 3.78 liter per 60 lb. | 27.2 kg. bag. If needed, Hyperform can be extended with 3/8 in. | 9.5 mm aggregate at a rate of 25 lb. | 11.34 kg. per bag.

SETTING TIME

Hyperform, Setting Time, ASTM C266 Initial set 5-10 minutes Final set 10-20 minutes and is ready for an epoxy topcoat within 1 hour. If ambient temperature in the structure at time of cure is below 50°F, additional cure time may be necessary

SAFETY DATA SHEET

VORTEX

QM-1s Restore®
BY VORTEX

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	• QM-1s Restore®
Trade Name	• QM-1s Restore®
Company	• Quadex LLC, 564 W. 9320 S., Sandy, UT 84070
Company Contact	• Matthew Peterson
Company Phone	• 844-782-4832
Emergency	• Domestic Shipments and to Canada: 1-800-633-8253 • International Shipments: 1-801-629-0667

2. HAZARDS IDENTIFICATION

Emergency Overview: OSHA Hazards	• This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).	
GHS Classification		
	Skin Corrosion/Irritation	• Category 1
	Serious Eye Damage/Eye Irritation	• Category 1
	Skin Sensitization	• Category 1
	Carcinogenicity/Inhalation	• Category 1A
	Specific Target Organ Toxicity: Single Exposure (Respiratory Tract Irritation)	• Category 3
GHS Label elements, including precautionary statements	*Pictogram* 	
Signal Word	• Danger	
Hazard Statement(S)	• Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. May cause cancer.	
Precautionary statement(s)		
Prevention	• Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Use outdoors in a well ventilated area. Wash any exposed body parts thouroughly after handling. Wear protective gloves/protective clothing/ eye protection/face protection.Contaminated clothing must not be allowed out of the workplace.	

2. HAZARDS IDENTIFICATION (CONTINUED)

Precautionary statement(s)	
Response	• If exposed or concerned: Immediately get medical advice/attention if you feel unwell or irritation or rash occurs.If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.If inhaled: Remove person to fresh air and keep comfortable for breathing. If swallowed: Rinse mouth. Do not induce vomiting.
Storage	• Restrict or control access to stockpile areas (store locked up). Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container OR • Vessel that stores or contains cement without an effective procedure for assuring safety. Store in a well ventilated area. Keep container tightly closed.
Disposal	• Dispose of contents/container in accordance with local/regional/national/international regulations.
HNOC	• None known.
Supplemental Information	• Dispose of contents/container in accordance with local/regional/national/international regulations.
Overexposure to portland cement can cause serious, potentially irreversible skin or eye damage in the form of chemical (caustic) burns, including third degree burns. The same serious injury can occur if wet or moist skin has prolonged contact exposure to dry portland cement.	

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Cas #	Percent
Portland Cement	• 65997-15-1	• 40-100
Admixtures		• 1-15
Monocrystalline Quartz	• 14808-60-7	• 40-70
Polypropylene	• 9003-07	• 0-5

4. FIRST AID MEASURE

First aid procedures	*Notes to physician: Symptoms may be delayed.*
Eye Contact	• Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do so. Seek medical attention immediately.
Skin Contact	• Wash skin with cool water and pH-neutral soap or mild detergent. Seek medical treatment in all cases of prolonged exposure to wet cement, cement mixtures, liquids from fresh cement products, or prolonged wet skin exposure to dry cement.
Inhalation	• If inhaled, remove to fresh air. If not breathing, give artificial respiratation. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	• Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

5. FIRE FIGHTING MEASURES

Flash Point	• The product is not flammable. No unusual fire or explosion hazards noted.
Suitable Extinguishing Media	• Dry chemical, C02, or water spray, Alcohol foam
Firefighting (Equipment Instructions)	• Use water spray to cool fire-exposed surfaces, protect personnel, and extinguish the fire. For large fires use all purpose-type by manufacturer's recommended techniques. Use carbon dioxide or dry chemical media for small fires. Use approved self-contained breathing apparatus and other protective equipment and/or if conditions warrant.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	• Wear adequate protective clothing and equipment.
Environmental Precautions	• Do not flush into surface water or sanitary sewer system.
Methods for Containment	• Prevent entry into waterways, sewer, basements or confined areas.
Methods for Cleaning Up	• Collect dry material using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalations of dust and contact with skin. Wear appropriate personal protective equipment.

7. HANDLING AND STORAGE

Handling	• Do not get this material in contact with eyes. Avoid contact with skin. Do not empty into drains.
Storage	• Use care in handling/storage. Keep container tightly closed, and keep dry.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Skin Protection	• Prevention is essential to avoiding potentially severe skin injury. Avoid contact with unhardened QM-1s Restore®. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposure to unhardened QM-1s Restore products might occur, wear impervious clothing and gloves to eliminate skin contact. Wear sturdy boots that are impervious to water to eliminate foot and ankle exposure. Do not rely on barrier carriers; barrier creams should not be used in place of gloves. Periodically wash areas that have come in contact with dry QM-1s Restore, wet cement or concrete fluids with a pH neutral soap. Wash again at the end of work. If irritation occurs, immediately wash the affected area and seek treatment. If clothing becomes saturated with wet concrete, it should be removed and replaced with clean dry clothing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

Respiratory Protection	• Avoid actions that cause dust to become airborne. Use local or general exhaust ventilation to control exposures below applicable exposure limits. Use NIOSH/MSHA approved (under 30 CFR 11) or NIOSH approved (under 42 CFR 84) respirators in poorly ventilated areas, if an applicable Exposure limit is exceeded, or when dust causes discomfort or irritation. (Advisory: Respirators and filters purchased after June 10, 1998 must be Certified under 42 CFR 84.)
Ventilation	• Use local exhaust or general dilution ventilation to exposure with applicable limits.
Eye Protection	• Where potentially subject to splashes or puffs of cement, wear safety glasses with side shields or goggles. In extremely dusty environments and unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with QM-1s Restore or fresh cement products.

9. PHYSICAL & CHEMICAL PROPERTIES

Appearance	• Grey and odorless
Color	• Grey
Odor	• Odorless
Odor Threshold	• Not available.
pH	• Not available.
Vapor Pressure	• Not available.
Vapor Density	• Not available.
Boiling Point	• Not available.
Melting Point/ Freezing Point	• Not available.
Solubility (Water)	• 75%
Specific Gravity	• 2.9
Relative Density	• Not available.
Flash Point	• Not available.
Flammability limits in air upper, % by volume	• Not available.
Flammability limits in air lower, % by volume	• Not available.
Auto-Ignition Temperature	
Other Data	

10. CHEMICAL STABILITY & REACTIVITY INFORMATION

Chemical Stability	• Stable under normal conditions.
Conditions to Avoid	• Although no hazardous reactions will occur, product should be kept dry.
Incompatible Materials	• Not available.
Hazardous Decomposition Products	• None

11. TOXICOLOGICAL INFORMATION

*Please refer to Section 2 for available information on potential health effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity	• No recognized unusual toxicity to plants or animals.
Environmental Effects	• An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Aquatic Toxicity	• No data available for this product.
Persistence and Degradability	• Not available.

13. DISPOSAL CONSIDERATIONS

Disposal Instructions	• Dispose in sanitary land fill in accordance with federal, state, and local regulations.
Waste from Residues / Unused Products	• Not applicable.

14. TRANSPORT INFORMATION

DOT	• Not regulated as dangerous goods.

15. REGULATORY INFORMATION

US Federal Regulations	• This product is a non “Hazardous Chemical” as defined by theOSHA Hazard Communication Standard 29 CFR 1910.1200. CERCLA/SARA Hazardous Substances - Not applicable.
Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2)	• Not regulated.
DEA Essential Chemical Code Number	• Not regulated.

15. REGULATORY INFORMATION (CONTINUED)

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))	• Not regulated.
DEA Exempt Chemical Mixtures Code Number	• Not regulated.
CERCLA (Superfund) Reportable Qty	• None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories		
	Immediate Hazard	• No
	Delayed Hazard	• No
	Fire Hazard	• No
	Pressure Hazard	• No
	Reactivity Hazard	• No
Section 302 Extremely Hazardous Substance	• No	
Section 311 Hazardous Chemical	• No	

16. OTHER INFORMATION

Further Information	• HMIS® is a registered trade and service mark of the NPCA.	
HMIS® Ratings		
	Health	• 2
	Flammability	• 0
	Physical hazard	• 0
NFPA Ratings		
	Health	• 2
	Flammability	• 0
	Instability	• 0
Disclaimer	• The information provided in this Safety Data Sheet is correct to the best of our knowledge information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification, The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.	
Issue Date	• Not available.	
This Data Sheet Contains	• Product and Company Identification: Synonyms changes from the previous Physical & Chemical Properties: Multiple Properties version in section(s): Transport Information: Material Transportation Information Regulatory Information: United States.	

TECHNICAL DATA SHEET

QM-1s Restore®

Portland-Based Structural Liner Mortar

TYPICAL PERFORMANCE CHARACTERISTICS

- **Compressive Strength 28 Day**
  (ASTM C39)
  >9,000 psi
- **Flexural Strength (ASTM C293)**
  >1,000 psi
- **Bond Strength (ASTM C882)**
  >1,500 psi
- **Freeze-Thaw (ASTM C666)**
  No visible damage after 300 cycles
- **Permeability (ASTM C1202)**
  350 Coulombs
- **Density**
  132 +/- 5 PCF
- **Shrinkage (ASTM C596)**
  0% @ 28 days

RECOMMENDED FOR

Vertical and overhead repairs to concrete or masonry sewer manholes, wetwells, metal pipes, water treatment facilities, tunnels, navigation locks, and dams.

DESCRIPTION

QM-1s Restore® is a Portland cement based, single component, high strength, fiber reinforced, shrinkage compensated cement mortar enhanced with a monocrystalline quartz aggregate. QM-1s Restore was designed to structurally repair deteriorated metal, concrete and masonry structures. QM-1s Restore delivers a monolithic one pass vertical surface application up to three inches in thickness by low pressure spraying or centrifugally casting.

FEATURES AND BENEFITS

- **Quality controlled, one-component blend for uniform results**
- **High early and ultimate compressive, flexural and bond strengths**
- **Resistant to sulfate attack**
- **Low permeability**

CURING

Cure in accordance with current ACI and manufacturer recommendations.

PRECAUTIONS

Avoid eye contact or prolonged contact with skin. Wash thoroughly after use. Persons using QM-1s Restore should wear necessary PPE consisting at minimum of eye protection, dust mask and rubber gloves. Read all product labels and technical literature.

QUADEX® A VORTEX COMPANY REPAIR MATERIALS

WARRANTY

Quadex, LLC warrants its products to be free of defects in material and workmanship. Unless superseded by project specifications and terms agreed upon in writing between installer and Quadex prior to bid, if within one year from purchase, any Quadex, LLC product is proven defective, the company will replace said product or refund its purchase price at its sole discretion. The company's obligation shall be limited solely to such replacement or refund. There are no other warranties by Quadex, LLC, expressed or implied. There is no warranty if Quadex products are used contrary to Quadex, LLC's written directions.

MATERIAL COMPATIBILITY

Structure Guard®-QS can be used in a composite system with Quadex Mortar Materials.

PROCEDURE

Prepare surface to be patched by removing unsound concrete, dirt, dust, oil and other debris using high pressure (min 3,500 psi | 241.3 bar) water blasting. Then rinse with potable water to remove all remaining dirt, sand and loose debris. This will provide a clean, damp surface to facilitate bond.

QM-1s Restore can be top coated with Structure Guard® or Structure Guard®-QS after 24 hours to perform as a composite system.

PACKAGING/YIELD

North America

			1.0-INCH | 25.4MM THICKNESS		
BAG SIZES LBS | KG	BAG MATERIAL	YIELD PER BAG FT^3 | M^3	BAG COVERAGE FT^2 | M^2	MASS COVERAGE LBS/FT^2 | KG/M^2	WATER PER BAG* % BY WEIGHT
60 | 27.2	Multi-Wall Paper	0.61 | 0.017	7.33 | 0.68	8.18 | 39.95	9.8 - 12.8
1,000 | 453.6	Super Sack	10.18 | 0.288	122.2 | 11.35		

*Due to natural deviations in the constituent materials, additional water may be necessary on occasion. Applicators are trained to adjust as needed based upon field performance of the product.

AluminaLiner® BY VORTEX

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	• AluminaLiner®
Trade Name	• AluminaLiner®
Company	• Quadex LLC, 564 W. 9320 S., Sandy, UT 84070
Company Contact	• Matthew Peterson
Company Phone	• 844-782-4832
Emergency	• Domestic Shipments and to Canada: 1-800-633-8253 • International Shipments: 1-801-629-0667

2. HAZARDS IDENTIFICATION

Emergency Overview: OSHA Hazards	• This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).	
GHS Classification		
	Skin Irritation	• Category 2
	Serious Eye Damage	• Category 1
	Specific Target Organ Toxicity: Single Exposure	• Category 3
GHS Label elements, including precautionary statements	*Pictogram* 	
Signal Word	• Danger	
Hazard Statement(s)		
	H315	• Causes skin irritation.
	H318	• Causes serious eye damage.
	H335	• May cause respiratory irritation.
Precautionary Statement(s)		
	P261	• Avoid breathing dust/fume/gas/mist/vapours/spray.
	P280	• Wear protective gloves/eye protection/face protection.
	P305 + P351 + P338	• IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2. HAZARDS IDENTIFICATION (CONTINUED)

HMIS Classification		
	Health hazard	• 3
	Flammability	• 0
	Physical hazards	• 0
NFPA Rating		
	Health hazard: Fire	• 3
	Reactivity Hazard	• 0
Potential Health Effects		
	Inhalation	• May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
	Skin	• May be harmful if absorbed through skin. Causes skin burns.
	Eyes	• Causes eye burns.
	Ingestion	• May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Cas #	Percent
Calcium Aluminate	• 65997-16-2	• 40-100
Admixtures		• 1-15
Monocrystalline Quartz	• 14808-60-7	• 40-70
Polypropylene	• 9003-07	• 0-5

4. FIRST AID MEASURE

First Aid Procedures	*Notes to physician: Symptoms may be delayed.* *General advice: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.*
Eye Contact	• Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do so. Seek medical attention immediately.
Skin Contact	• Contact Wash off with plenty of soap and water. Get medical attention if irritation develops and persists.
Inhalation	• If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Ingestion	• Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. If ingestion of a large amount does occur, call a poison control center immediately.

5. FIRE FIGHTING MEASURES

Flammable Properties	• The product is not flammable. No unusual fire or explosion hazards noted.
Suitable Extinguishing Media	• Dry chemical, C02, or water spray, Alcohol foam. In the event of fire, use water spray to cool unopened containers. Cool containers exposed to flames with water until well after the fire is out. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Specific Methods	• None available.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	• Keep unnecessary personnel away. Keep upwind.
Environmental Precautions	• Do not flush into surface water or sanitary sewer system.
Methods for Containment	• Stop the flow of material, if this is without risk. Dike the spilled material.
Methods for Cleaning Up	• Shovel into labled waste container for reuse or disposal. Wear adequate protective equipment. Area may be washed down with water.

7. HANDLING AND STORAGE

Handling	• Do not get this material in contact with eyes. Avoid contact with skin. Do not empty into drains.
Storage	• Store in dry place and keep sealed until ready to use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits: US. ACGIH Threshold Limit Values	Type	Value
Calcium Aluminate	• TWA	• 10 mg/m3
Admixtures	• TWA	• 10 mg/m3
Monocrystalline	• TWA	• 10 mg/m3
Polypropylene	• TWA	• 10 mg/m3
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)	Type	Value
N/A		
US. OSHA Table Z-3 (29 CFR 1910.1000)	Type	Value
N/A		
Engineering Controls	• Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.	

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION (CONTINUED)

Personal Protective Equipment	
Eye / Face Protection	• Do not get in eyes. Chemical goggles are recommended.
Skin Protection	• Avoid contact with the skin. Wear protective gloves. Wear suitable protective clothing as protection against splashing or contamination.
Respiratory Protection	• When workers are facing concentrations above the exposure limit they must use NIOSH/MESHA respirators.
General Hygiene Considerations	• Do not get in eyes. Avoid contact with skin.

9. PHYSICAL & CHEMICAL PROPERTIES

Appearance	• Not available.
Physical State	• Powder
Form Viscous	• Powder
Color	• Grey
Odor	• Odorless
Odor Threshold	• Not available.
pH	• Not available.
Vapor Pressure	• Not available.
Vapor Density	• Not available.
Boiling Point	• Not available.
Melting Point/ Freezing Point	• Not available.
Solubility (Water)	• Slight (0.01 – 1.0%)
Specific Gravity	• 3.15
Relative Density	• Not available.
Flash Point	• Not available.
Flammability limits in air upper, % by volume	• Not available.
Flammability limits in air lower, % by volume	• Not available.
Auto-Ignition Temperature	
Other Data	

10. CHEMICAL STABILITY & REACTIVITY INFORMATION

Chemical Stability	• Stable under normal conditions.
Conditions to Avoid	• Although no hazardous reactions will occur, product should be kept dry.
Incompatible Materials	• Not available.

10. CHEMICAL STABILITY & REACTIVITY INFORMATION (CONTINUED)

Hazardous Decomposition Products	• None

11. TOXICOLOGICAL INFORMATION

Toxicological Data	
Components	• Test Results / None
Local Effects	• Irritating to skin. Contact may irritate or burn eyes.
Chronic Effects	• Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Carcinogenicity	• None

12. ECOLOGICAL INFORMATION

Toxicological Data	
Components	• Test Results / None
Ecotoxicity	• Not available.
Environmental Effects	• An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Aquatic Toxicity	• No data available for this product.
Persistence and Degradability	• Not available.

13. DISPOSAL CONSIDERATIONS

Disposal Instructions	• Dispose in sanitary land fill in accordance with federal, state, and local regulations.
Waste from Residues / Unused Products	• Not applicable unused products.

14. TRANSPORT INFORMATION

DOT	• Not regulated as dangerous goods.

15. REGULATORY INFORMATION

US Federal Regulations	• This product is a non “Hazardous Chemical” as defined by theOSHA Hazard Communication Standard 29 CFR 1910.1200. CERCLA/SARA Hazardous Substances - Not applicable.
Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2)	• Not regulated.
DEA Essential Chemical Code Number	• Not regulated.

15. REGULATORY INFORMATION (CONTINUED)

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))	• Not regulated.
DEA Exempt Chemical Mixtures Code Number	• Not regulated.
CERCLA (Superfund) Reportable Qty	• None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories		
	Immediate Hazard	• No
	Delayed Hazard	• No
	Fire Hazard	• No
	Pressure Hazard	• No
	Reactivity Hazard	• No
Section 302 Extremely Hazardous Substance	• No	
Section 311 Hazardous Chemical	• No	

16. OTHER INFORMATION

Further Information	• HMIS® is a registered trade and service mark of the NPCA.	
HMIS® Ratings		
	Health	• 2
	Flammability	• 0
	Physical hazard	• 0
NFPA Ratings		
	Health	• 2
	Flammability	• 0
	Instability	• 0
Disclaimer	• The information provided in this Safety Data Sheet is correct to the best of our knowledge information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification, The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.	
Issue Date	• Not available.	
This Data Sheet Contains	• Product and Company Identification: Synonyms changes from the previous Physical & Chemical Properties: Multiple Properties version in section(s): Transport Information: Material Transportation Information Regulatory Information: United States.	

TECHNICAL DATA SHEET

AluminaLiner® BY VORTEX

TYPICAL PERFORMANCE CHARACTERISTICS

- **Compressive Strength psi (ASTM C39)**
  28-day >9000
- **Flexural Strength psi (ASTM C293)**
  28-day >1000
- **Bond Strength psi (ASTM C882)**
  >2000
- **Freeze-Thaw Durability (ASTM C666)**
  No visible damage after 300 cycles
- **Permeability (ASTM C 1202)**
  350 Coulombs
- **Shrinkage at 95% Humidity (ASTM C596)**
  28-day 0%
- **Sulfide Resistance (ASTM C267)**
  No attack
- **Density**
  135 +/- 5 PCF

RECOMMENDED FOR

Vertical and overhead repairs to concrete or masonry sewer structures such as **manholes, wetwells, pipe and treatment plant structures** where corrosion is a problem.

QUADEX® A VORTEX COMPANY REPAIR MATERIALS

Calcium Aluminate Sewer Rehabilitation Mortar

DESCRIPTION

AluminaLiner® is a factory blended, one component, fiber reinforced, 100% calcium aluminate cement designed to provide excellent corrosion resistance against typical hydrogen sulfide gas (microbiologically induced) corrosion, add structural integrity and stop groundwater infiltration in sewer structures with a pH of 2 or greater. This unique formulation allows for a monolithic one-pass application up to three inches in thickness by low pressure spraying or centrifugally spinning.

PACKAGING

AluminaLiner is supplied in 60 lb. (27 kg.) poly-lined bags.

YIELD

One 60-lb. bag of AluminaLiner will yield approximately .48 cu. ft. and will cover 11.5 sq. ft. at a 1/2 in. thickness.

FEATURES AND BENEFITS

- **Quality controlled, one-component blend for uniform results**
- **High early and ultimate compressive, flexural and bond strengths**
- **Resistant to sulfide attack**
- **Low permeability**

CURING

Cure in accordance with Quadex recommended curing agent.

VORTEX

WARRANTY

Quadex, LLC warrants its products to be free of defects in material and workmanship. Unless superseded by project specifications and terms agreed upon in writing between installer and Quadex prior to bid, if within one year from purchase, any Quadex, LLC product is proven defective, the company will replace said product or refund its purchase price at its sole discretion. The company's obligation shall be limited solely to such replacement or refund. There are no other warranties by Quadex, LLC, expressed or implied. There is no warranty if Quadex products are used contrary to Quadex, LLC's written directions.

PROCEDURE

Prepare surface to be patched by removing unsound concrete, dirt, dust, oil and other debris using high pressure (3500 psi) water blasting. Then rinse with potable water to remove all remaining dirt, sand and loose debris. This will provide a clean, damp surface to allow for a good bond.

Use approximately 0.8 to 1.0 gallons of potable water per 60 lb. bag of AluminaLiner®. First add water to mixer, start the mixer and add AluminaLiner until mortar is completely mixed.

Apply AluminaLiner by low pressure spraying on vertical or overhead surfaces to a monolithic thickness of 1/2 to 3 inches in one pass, trowel to smooth surface.

PRECAUTIONS

Avoid eye contact or prolonged contact with skin. Wash thoroughly after use. Persons using AluminaLiner should wear necessary eye protection, dust mask and rubber gloves. Read all product labels and technical literature.

HYDRAULIC CEMENT

MANUFACTURER
A.W. Cook Cement Products
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DESCRIPTION

CEMTEC HYDRAULIC CEMENT is a quick setting, hydraulic cement compound which instantly stops running water or seepage through concrete or masonry walls and floors. CEMTEC HYDRAULIC requires only the addition of clean water to make it ready to use. CEMTEC HYDRAULIC contains no metallics, will not shrink or oxidize, and seals out water for the life of the structure. CEMTEC HYDRAULIC sets in 3-5 minutes. CEMTEC HYDRAULIC 'Hot Mix' set is approx. 60 to 90 seconds, depending upon the temperature of the mixing water and the surface onto which it is applied. Low temperatures will retard the set. High temperature will accelerate the set.

USES

Mainly, but not limited to, plugging holes, cracks and faults causing leaking and seepage through concrete floors, walls and junctions, general masonry, around inserts such as sleeves, pipes, etc. Suitable for any similar architectural or structural concrete application - pits, mines, tunnels, reservoirs, manholes, miscellaneous grouting, etc.

APPLICATION

Applying CEMTEC HYDRAULIC is usually a two man job - one mixing small batches and the other placing the material quickly and holding it with pressure until water seepage stops. Force the mixed CEMTEC HYDRAULIC into the crack or hole using maximum pressure. When areas of high water pressure are encountered, hold the CEMTEC HYDRAULIC in your hand until you can feel the heat generation (the use of gloves is recommended). Immediately push and force into the opening and hold firmly in place with palm, trowel or wood block until set. Then shave the surface flush with a sharp pointing tool, knife or trowel. Plug a long opening with successive small rolls of CEMTEC HYDRAULIC.

PACKAGING

50 pound pail.

COVERAGE

1 pound will fill 18 cubic inches or a crack ¾" x ¾" x 30".

LIMITATIONS

Very cold or very hot weather will retard or quicken the setting time. Neither harms its ultimate strength or effectiveness, but special care must be used in mixing and applying the material.

CLEAN UP

Clean up is simple and easy with soap and water. Rinse tools before material hardens.

PRECAUTIONS

Contains Portland cement-avoid eye contact or prolonged contact with skin, Wash thoroughly after handling. In case of eye contact, flush with water for at least 15 minutes. Consult a physician immediately. Keep out of reach of children. Contains free silica- DO NOT breathe dust. May cause delayed lung injury. Follow OSHA safety and health standards for crystalline silica (quartz). See material safety data sheet for detailed information.

TECHNICAL DATA

COMPRESSIVE STRENGTH
ASTM C-109

1 Hour	1500 PSI
1 Day	3500 PSI
7 Day	4900 PSI
28 Day	5500 PSI

TENSILE STRENGTH
ASTM C-496

28 Day	650 PS1

BOND STRENGTH
ASTM C-882 (modified)

4 Hours	270 PSI
28 Days	880 PSI

Setting Times (Gilmore)

"Regular"	3-5 minutes (blue lid)
"Hot Mix"	65 seconds (red lid)

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