1. Section 251500   
   Real-Time Jobsite Interior Climate Monitoring - Floorcloud
   1. PART 1  GENERAL
      1. SECTION INCLUDES
         1. Mobile and desktop software.
         2. Real-time monitoring of Temperature, Humidity, and Dew Point Sensors with GPS tracking, which includes the following:
            1. Floors materials, wall coverings, resinous coatings, millwork, fireproofing materials.
         3. Product Manufacturer's Specification Database.
      2. RELATED REQUIREMENTS
         1. Section 064100-Architectural Wood Casework.
         2. Section 071000-Damproofing and Waterproofing.
         3. Section 090561-Common Work Results for Flooring Preparation.
         4. Section 092300-Gypsum Plastering.
         5. Section 092400-Cement Plastering.
         6. Section 092523-Lime Based Plastering.
         7. Section 092613-Gypsum Veneer Plastering.
         8. Section 093000-Tiling.
         9. Section 095100-Acoustical Ceilings.
         10. Section 095153-Direct-Applied Acoustical Ceilings.
         11. Section 095426-Suspended Wood Ceilings.
         12. Section 095800-Integrated Ceiling Assemblies.
         13. Section 096229-Cork Flooring.
         14. Section 096253-Synthetic Turf Flooring.
         15. Section 096340-StoneFlooring.
         16. Section 096423-Wood Parquet Flooring.
         17. Section 096429-Wood Strip and Plank Flooring.
         18. Section 096433-Laminated Wood Flooring.
         19. Section 096436-Bamboo Flooring.
         20. Section 096466-Wood Athletic Flooring.
         21. Section 096500-Resilient Flooring.
         22. Section 096566-Resilient Athletic Flooring.
         23. Section 096613-Portland Cement Terazzo Flooring.
         24. Section 096600-Static Control Flooring.
         25. Section 096623-Resinous Matrix Terazzo Flooring.
         26. Section 096700-Fluid-Applied Flooring.
         27. Section 096813-Tile Carpeting.
         28. Section 096816-Sheet Carpeting.
         29. Section 096900-Access Flooring.
         30. Section 097200-Wall Coverings
         31. Section 097500-Stone Facing.
         32. Section 097733-Terrazo Wall Finish.
         33. Section 097800-Interior Wall Paneling.
         34. Section 098300-Acoustic Finishes.
         35. Section 098430-Sound-Absorbing Wall and Ceiling Untis.
         36. Section 099000-Painting and Coating.
         37. Section 099123-Interior Painting.
         38. Section 099300-Staining and Transparent Finishing.
         39. Section 099600-High-Performance Coatings.
         40. Section 099723-Concrete and Masonry Coating.
         41. Section 099725-Mineral-Based Coatings.
         42. Section 099730-Decorative Cementitious Coatings.
         43. Section 123000-Casework.
      3. REFERENCE STANDARDS
         1. ASTM F710-22 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
         2. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014; adapt to local jurisdiction.
         3. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021; adapt to local jurisdiction.
      4. SUBMITTALS
         1. Sensor device manufacturing meets TS16949, ISO13485, ISO 9001, ISO14001, OHSAA 18001, and BABT PS340 certifications and standards for accuracy.
         2. Technical Data Sheet.
         3. Floorcloud Product Specification Submittal Sheet.
         4. List test location areas on chart and show same on 8 ½ x 11 site map (when such map is made available).
      5. QUALITY ASSURANCE
         1. Product Certifications:
            1. Environmental: RoHS.
            2. Regulatory: FCC Part 15.22.24.
            3. Rating: IP 67.
         2. Product Qualifications:
            1. Device manufacturing meets TS16949, ISO13485, ISO 9001, ISO14001, OHSAA 18001, and BABT PS340 certifications and standards.
            2. Listed and labeled as suitable for intended purpose.
            3. Provide standard off-the-shelf products currently under manufacture.
      6. WARRANTY
         1. Warrant supplied sensors to be free from defects in quality for up to one year from date of receipt.
         2. Provide regularly scheduled software and firmware updates to bring sensors to current performance for the duration of the in-service life of the device.
         3. Complete technical support available: (617) 395-1668.
   2. PART 2  PRODUCTS
      1. MANUFACTURERS
         1. Basis of Design:
            1. Floorcloud Jobsite Conditions Sensor and software: www.floorcloud.com. Temperature, humidity, and dew point measurements, with GPS location tracking.
      2. Device performance
         1. Floorcloud Jobsite Conditions Sensor
            1. Climate Measurements:

Temperature:

Operating Temperature: - 40 degrees F to 149 degrees F.

Accuracy (32 degrees F to 149 degrees F): plus or minus 1.00 degree F.

Accuracy (- 4 degrees F to 32 degrees F): plus or minus 1.25 degrees F.

Accuracy (- 40 degrees F to - 4 degrees F): plus or minus 1.50 degrees F.

Humidity:

Operating Humidity Range: 0 to 100%.

Accuracy (20% to 80%): plus or minus 3%.

* + - * 1. Power Sources

Battery Life: Up to 90 days with a single charge.

Battery Charge Time: 3-hours from 0% to 100%.

Capacity: 4000 mAh Rechargeable Li-oN.

Charging cable: Micro-USB to 110v outlet or back-up power pack.

LED Lights: Green, Orange, Red.

* + - * 1. Physical Characteristics:

Grade: Industrial / IP 67 Rated (Dust & Moisture).

Dimensions: 4.7 inches L x 2.5 inches W x 1-inch H.

Weight: 5.5 ounces.

Drop: 4 feet onto concrete.

* + - * 1. Network Connectivity:

IoT Cellular Network Connectivity.

LTE: Cat-M1.

GPS: 2G GSM GPRS - Quad Band.

* + - * 1. Certifications: Device manufacturing meets TS16949, ISO13485, ISO 9001, ISO14001, OHSAA 18001, and BABT PS340 certifications and standards.
        2. Testing Timeframe:

Monitoring is recommended to take place a minimum of 7 (seven) days prior to the installation of finish materials, or during material acclimation, and continue during the installation process. Post installation monitoring shall continue as required.

* 1. PART 3  EXECUTION
     1. EXAMINATION
        1. Examine project plans thoroughly to determine sensor locations. Issue a list of noted discrepancies, conflicts, or omissions to the General Contractor, the Architect, or the Owner.
        2. Contractor is responsible for site inspection to verify and confirm sensor(s) installation as proposed. Inform about noted discrepancies, conflicts, or omissions to the General Contractor for resolution.
     2. installation
        1. Install Floorcloud application software on mobile device in accordance with manufacturer’s instructions.
        2. Set up project information in Floorcloud software.
        3. Set up and name sections of the project to be monitored with Jobsite Conditions Sensors in the Floorcloud software.
        4. Connect applied building material products to be installed and monitored from the Floorcloud manufacturer’s specification database to each section of the project.
        5. Floorcloud sensor installation: (Follow Floorcloud instructional videos at www.floorcloud.com).
           1. Mount Floorcloud sensors to a vertical surface (wall, column, etc) in section of jobsite to be monitored at approximately thermostat height. Affix sensor to Floorcloud information signage using double-sided tape strips.

Each Floorcloud sensor covers approximately 10,000 square feet of open floor space. Use additional sensors if section contains partitions or multiple rooms.

* + - * 1. Scan the Floorcloud Jobsite Conditions Sensor QR code to activate sensor. This will begin the sensor acclimation process and connect securely to the cellular IoT network.  Sensor will monitor ambient temperature, humidity, and dewpoint conditions each hour and report device GPS location.
      1. Floorcloud Mobile Alerts: Alerts will be automatically generated and pushed to mobile devices when jobsite conditions deviate from product manufacturer’s specifications. Alert data can be shared with project stakeholders from within the Floorcloud mobile app.
    1. CLOSEOUT ACTIVITIES
       1. See Section 017800 - Closeout Submittals.
       2. See Section 017900 - Demonstration and Training.

1. END OF SECTION